DSC-F828

SERVICE MANUAL

Ver 1.0 2003. 12
Revision History

How to use
Acrobat Reader

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Korea Model
Tourist Model
Chinese Model
Japanese Model

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

• For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987627951.pdf).

• Reference No. search on printed wiring boards is available.
• When the laser unit is repaired,
Make sure to follow the items of “NOTE ON HANDLING THE LASER DIODE”.

On the SY-096 board
This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the SY-096 board.
Therefore, schematic diagram, printed wiring board, mounted parts location and electrical parts list of the SY-096 board are not shown.
The following pages are not shown.

Schematic diagram	Pages 4-25 to 4-44	Mounted parts location	Pages 4-65 to 4-66
Printed wiring board	Pages 4-59 to 4-62	Electrical parts list	Pages 5-14 to 5-18

DIGITAL STILL CAMERA

SONY®

Self Diagnosis Supported model

Cyber-shot Digital Still Camera

InfoLITHIUM M

MEMORY STICK

SPECIFICATIONS

■ Camera

[System]

Image device 11 mm (2/3 type) color CCD
4-color filter (RGBE)

Total pixels number of camera
Approx. 8 314 000 pixels

Effective pixels number of camera
Approx. 8 068 000 pixels

Lens Carl Zeiss Vario-Sonnar T*
7.1× zoom lens
f=7.1 to 51 mm
(35 mm camera conversion: 28 to 200 mm)
F2.0-2.8
Filter diameter: 58 mm (2 3/8 inches)

Exposure control
Automatic, Shutter speed priority, Aperture priority, Manual exposure, Scene selection (4 modes)

White balance
Automatic, Daylight, Cloudy, Fluorescent, Incandescent, Flash, One-push

File format (DCF compliant)
Still images: Exif Ver. 2.2, JPEG compliant, RAW, TIFF, DPOF compatible
Audio with still image: MPEG1 compliant (Monaural)
Movies: MPEG1 compliant (Monaural)

Recording medium
"Memory Stick", Microdrive, CompactFlash card (TypeI/TypeII)

Flash Recommended distance (when ISO sensitivity is set to Auto)
0.5 to 4.5 m (19 3/4 inches to 14 feet 9 1/4 inches) (W)
0.6 to 3.3 m (23 5/8 inches to 10 feet 10 inches) (T)

Viewfinder Electric viewfinder (color)

[Output connectors]

A/V OUT (MONO) jack (Monaural)
Minijack
Video: 1 Vp-p, 75Ω, unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance 2.2 kΩ

Accessory jack
Mini-minijack (ø 2.5 mm)

USB jack mini-B

USB communication
Hi-Speed USB (USB 2.0 High-Speed compliant)

[LCD screen]

LCD panel used
4.6 cm (1.8 type) TFT drive

Total number of dots
134 400 (560×240) dots

[Finder]

LCD panel used
1.1 cm (0.44 type) TFT drive

Total number of dots
235 200 (980×240) dots

[Power, general]

Used battery pack
NP-FM50

Power requirements
7.2 V

Power consumption (during shooting with LCD screen on)
2.2 W

Operating temperature range
0° to +40°C (32° to +104°F)
(When using the Microdrive: +5° to +40°C (41° to +104°F))

Storage temperature range
–20° to +60°C (–4° to +140°F)

Dimensions (lens: W-end)
134.4 × 91.1 × 157.2 mm
(5 3/8 × 3 × 5/8 × 6 1/4 inches)
(W/H/D, protruding portions not included)

Mass Approx. 955 g (33.7 oz) (battery pack NP-FM50, "Memory Stick," shoulder strap, lens cap, and so on included)

Microphone Electret condenser microphone

Speaker Dynamic speaker

Exif Print Compatible

PRINT Image Matching II Compatible

PictBridge Compatible

■ AC-L15A/L15B AC Adaptor

Power requirements
AC 100 – 240 V, 50/60 Hz

Current consumption
0.35 – 0.18 A

Power consumption
18 W

Output voltage
8.4 V DC, 1.5 A

Operating temperature range
0° to +40°C (32° to +104°F)

Storage temperature range
–20° to +60°C (–4° to +140°F)

Maximum dimensions
Approx. 56 × 31 × 100 mm
(2 1/4 × 1 1/4 × 4 inches) (W/H/D), excluding projecting parts

Mass Approx. 190 g (6.7 oz) excluding power cord (mains lead)

■ NP-FM50 battery pack

Used battery
Lithium-ion battery

Maximum voltage
DC 8.4 V

Nominal voltage
DC 7.2 V

Capacity 8.5 Wh (1 180 mAh)

Accessories

- AC Adaptor (1)
- Power cord (mains lead) (1)
- USB cable (1)
- Battery pack NP-FM50 (1)
- A/V connecting cable (1)
- Shoulder strap (1)
- Lens cap (1)
- Lens cap strap (1)
- Lens hood (1)
- CD-ROM (USB driver: SPVD-013) (1)
- CD-ROM (Image Data Converter) (1)
- Operating Instructions (1)

Design and specifications are subject to change without notice.

CAUTION
Use of controls or adjustments or performance procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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Schematic diagrams of the SY-096 board are not shown.
Pages from 4-25 to 4-44 are not shown.

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Printed wiring board of the SY-096 board is not shown.
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Mounted parts location of the SY-096 board is not shown.
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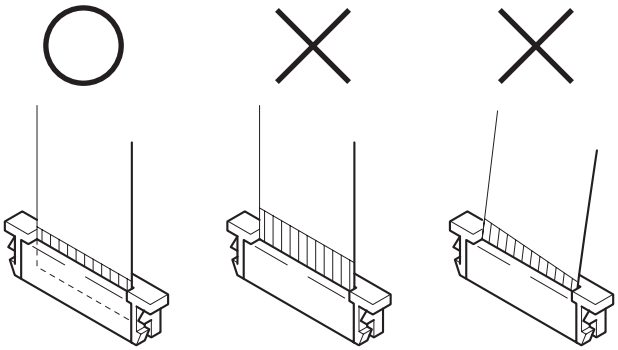
Parts list of the SY-096 board are not shown.
Pages from 5-14 to 5-18 are not shown.

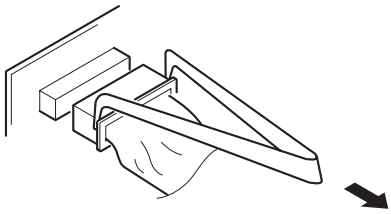
SECTION 1
SERVICE NOTE

1-1. NOTE FOR REPAIR

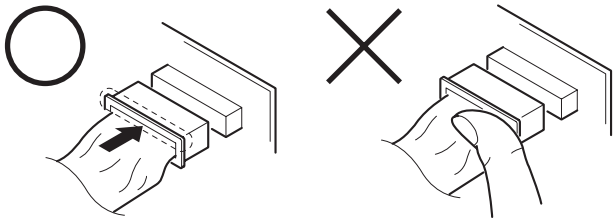
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



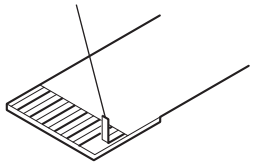
When remove a connector, don't pull at wire of connector.
Be in danger of the snapping of a wire.



When installing a connector, don't press down at wire of connector.
Be in danger of the snapping of a wire.



Cut and remove the part of gilt which comes off at the point. (Take care that there are some pieces of gilt left inside)

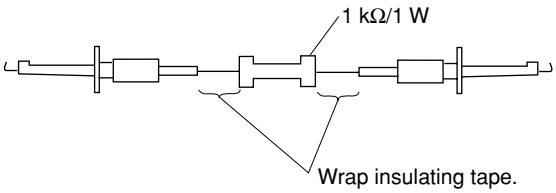


1-2. DISCHARGING OF THE FLASH UNIT'S CHARGING CAPACITOR

The charging capacitor of the FLASH unit is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the DSC-F828 is simply turned off. Therefore, the remaining voltage must be discharged as described below.

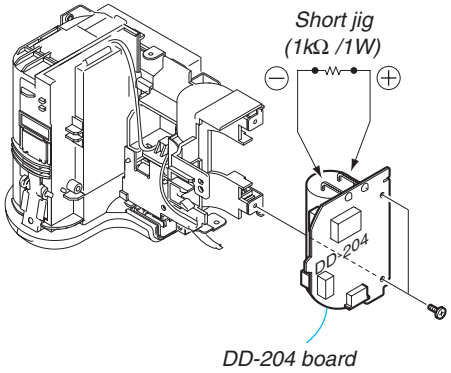
1-2-1. Preparing the Short Jig

To preparing the short jig. a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11)
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



1-2-2. Discharging the Capacitor

Short circuits between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



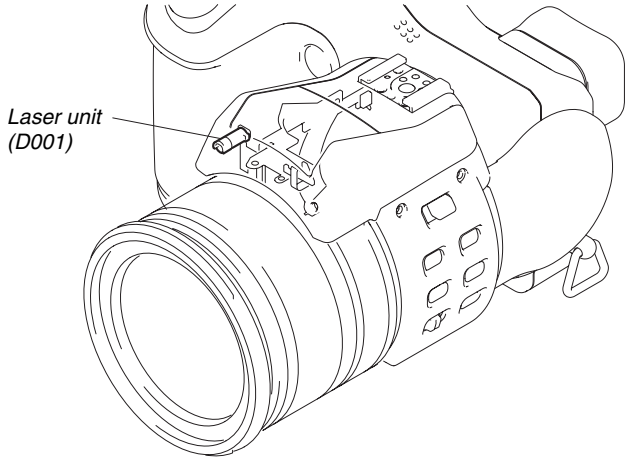
1-3. NOTES ON HANDLING THE LASER DIODE [LASER UNIT]

The laser diode may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Soldering Conditions of Laser Unit

Temperature of the Soldering Iron	Less than 350 °C
Time to Solder	3 seconds
Interval to Solder	Next terminal is soldered after waiting for 1 second

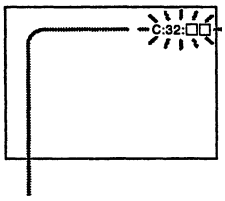
Note: Adjustment is needed when laser unit is replaced.
Refer to "21. AF Laser Output Adjustment" (page6-29) and "22. AF Laser Axis Check" (page6-30) of SERVICE MANUAL, ADJ (987627951.pdf).



1-4. DESCRIPTION ON SELF-DIAGNOSIS DISPLAY

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

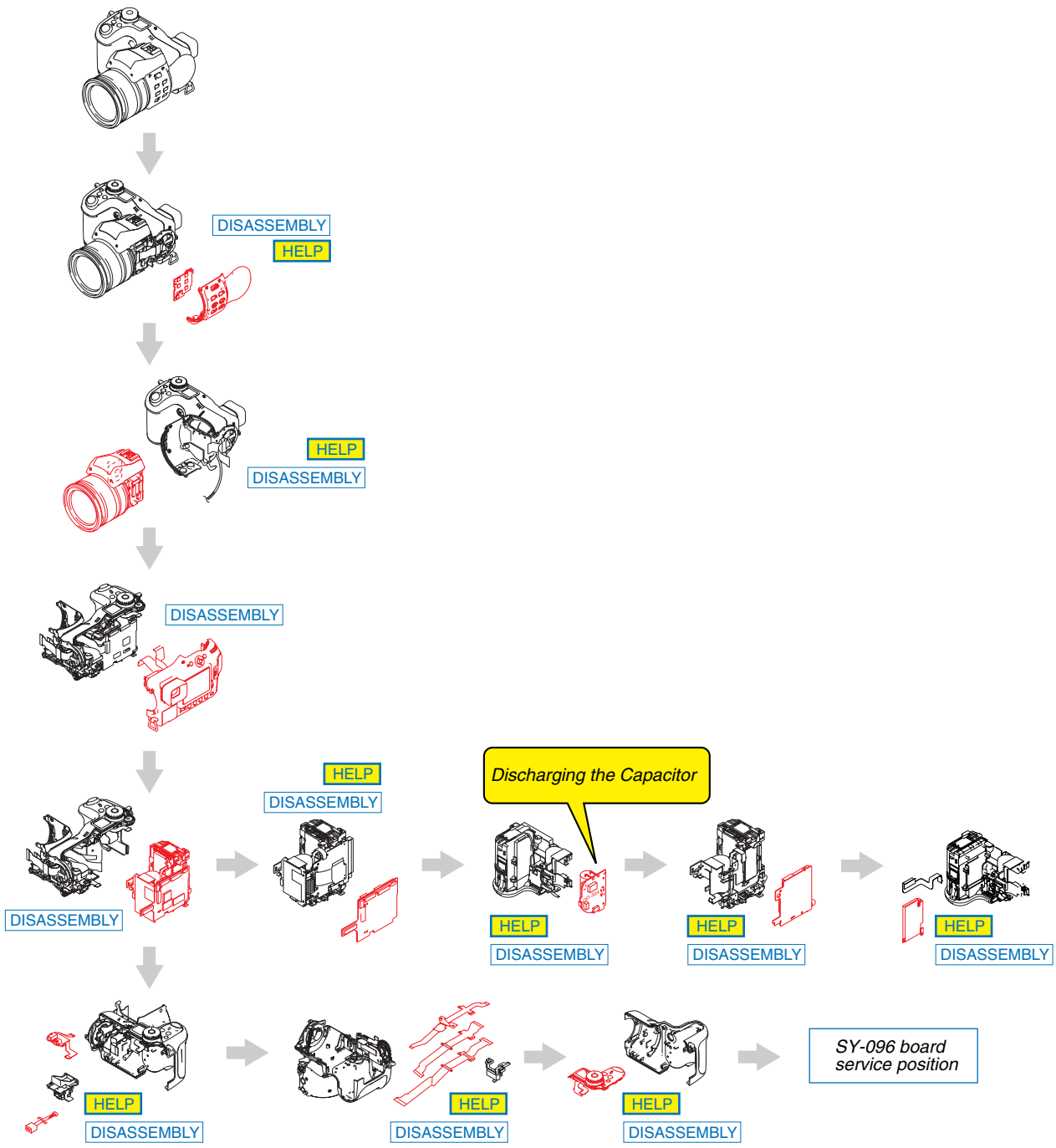
- C: □□: □□
  The contents which can be handled by customer, are displayed.
- E: □□: □□
  The contents which can be handled by engineer, are displayed.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:01	Turn off the main power then back on.	Trouble with hardware.	SYSTEM ERROR
C:13:01	Replace the memory stick. Format the memory stick with the DSC-F828.	• The type of memory stick that cannot be used by this machine, is inserted. • Data is damaged. • Unformatted memory stick is inserted.	MEDIA ERROR
E:91:01	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	Flash LED Flash display Flashing at 3.2 Hz
E:61:00 *1	Checking of lens drive circuit	When failed in the focus initialization.	—
E:61:10 *1			

Note : The error code is cleared if the battery is removed, except defective flash unit.
*1: The error display is given in two ways.

SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.



PROCEDURE OF REMOVING THE SY-096 BOARD (SERVICE POSITION)

① 2-1. CABINET (LR) ASSEMBLY, SW-410 BOARD ..... (page 2-2)
② 2-2. STROBOSCOPE BLOCK ASSEMBLY ..... (page 2-3)
③ 2-9. REAR CABINET BLOCK ASSEMBLY ..... (page 2-8)
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⑤ 2-14. SY-096 BOARD ..... (page 2-11)
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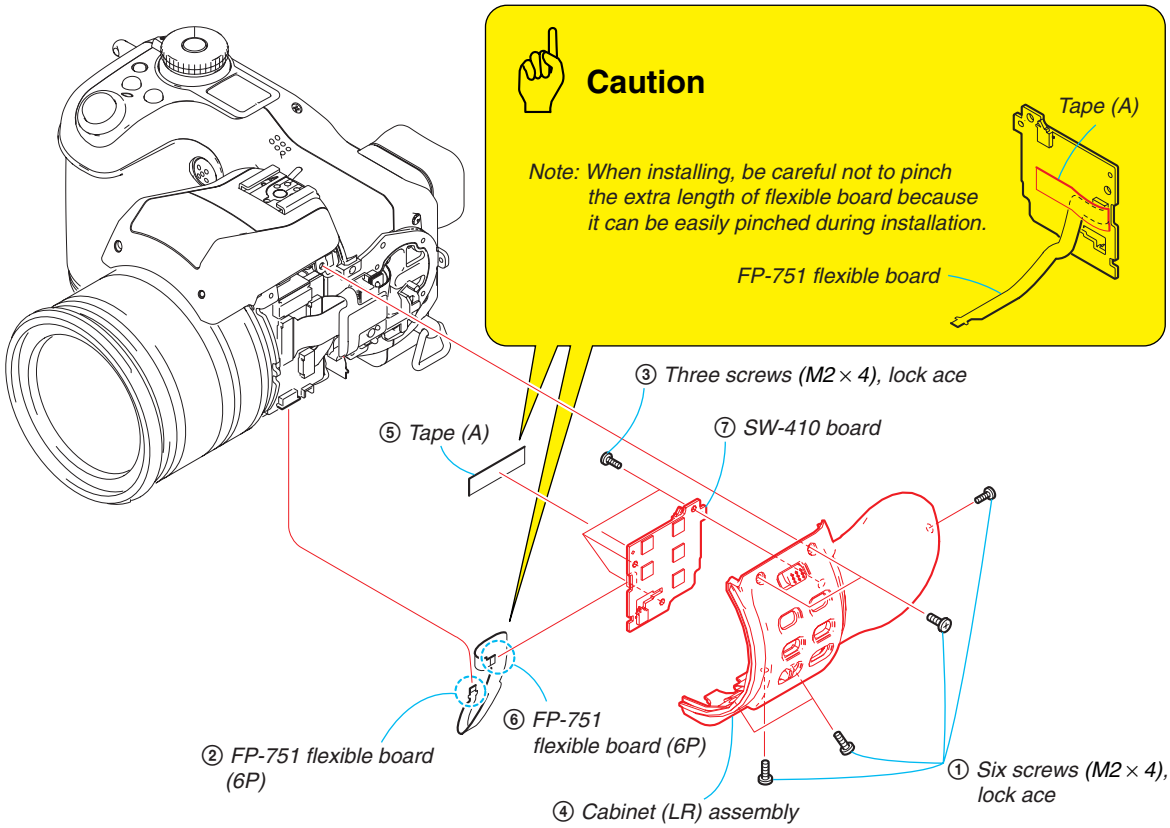
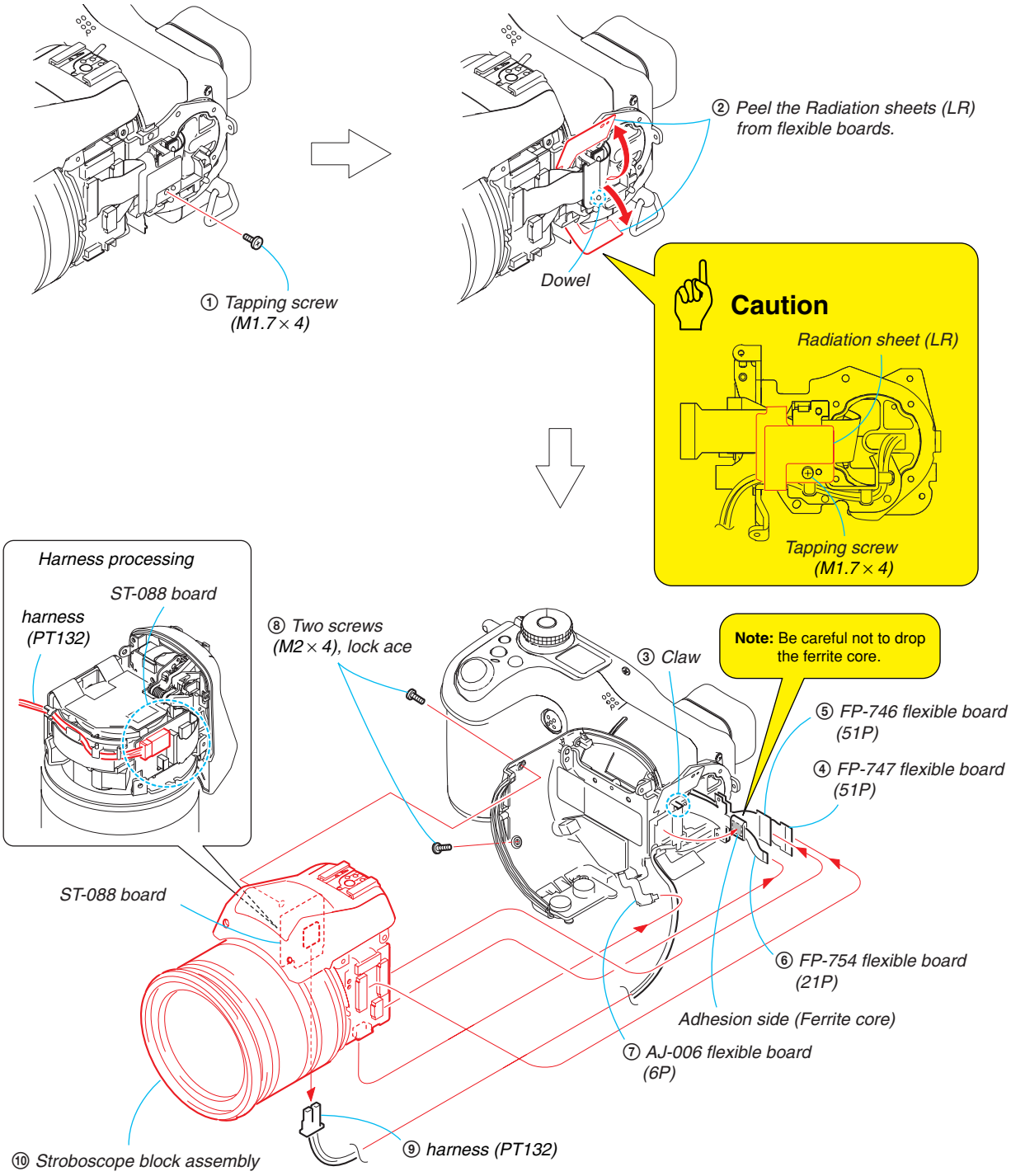
⑩ 2-21. FP-747/746/754 FLEXIBLE BOARD ..... (page 2-15)
⑪ 2-24. CABINET UPPER ASSEMBLY ..... (page 2-17)

NOTE: Follow the disassembly procedure in the numerical order given.

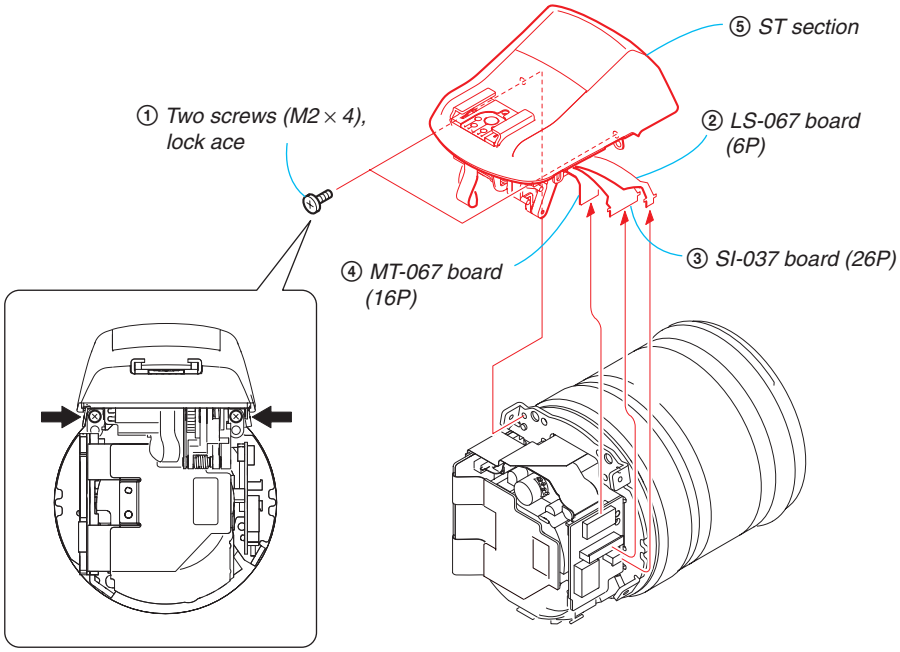
2-1. CABINET (LR) ASSEMBLY, SW-410 BOARD


Caution
Note: When installing, be careful not to pinch the extra length of flexible board because it can be easily pinched during installation.
Tape (A)
FP-751 flexible board
③ Three screws (M2 × 4), lock ace
⑤ Tape (A)
⑦ SW-410 board
⑥ FP-751 flexible board (6P)
② FP-751 flexible board (6P)
① Six screws (M2 × 4), lock ace
④ Cabinet (LR) assembly

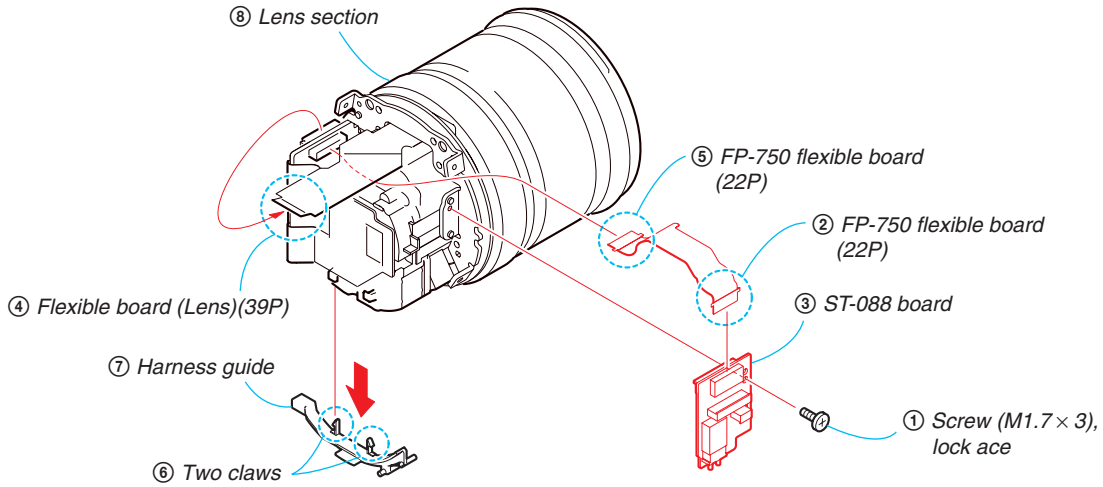
2-2. STROBOSCOPE BLOCK ASSEMBLY


① Tapping screw (M1.7 × 4)
② Peel the Radiation sheets (LR) from flexible boards.
Dowel
Caution
Radiation sheet (LR)
Tapping screw (M1.7 × 4)
Harness processing
ST-088 board
harness (PT132)
⑧ Two screws (M2 × 4), lock ace
③ Claw
Note: Be careful not to drop the ferrite core.
⑤ FP-746 flexible board (51P)
④ FP-747 flexible board (51P)
ST-088 board
⑥ FP-754 flexible board (21P)
Adhesion side (Ferrite core)
⑦ AJ-006 flexible board (6P)
⑨ harness (PT132)
⑩ Stroboscope block assembly

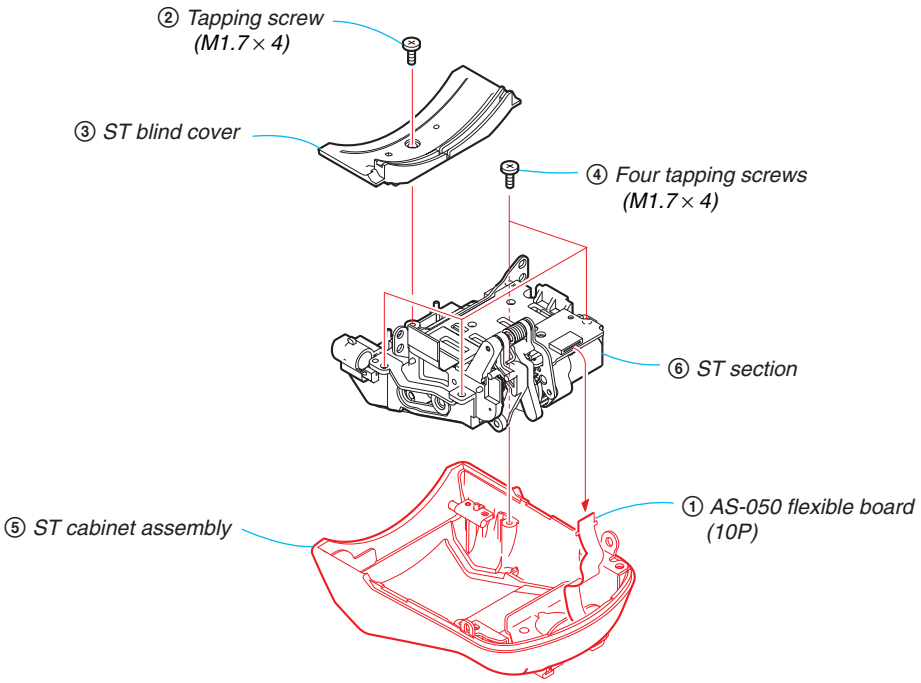
2-3. ST SECTION



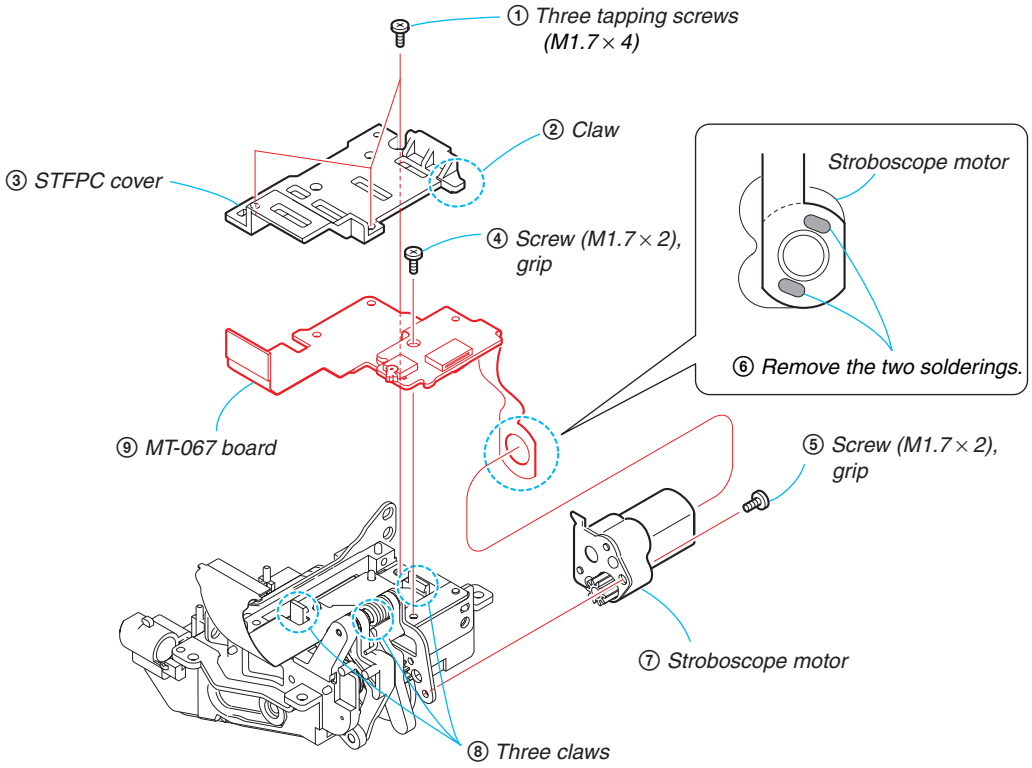
2-4. ST-088 BOARD, LENS SECTION


⑧ Lens section
⑤ FP-750 flexible board (22P)
② FP-750 flexible board (22P)
④ Flexible board (Lens)(39P)
③ ST-088 board
⑦ Harness guide
① Screw (M1.7 × 3), lock ace
⑥ Two claws

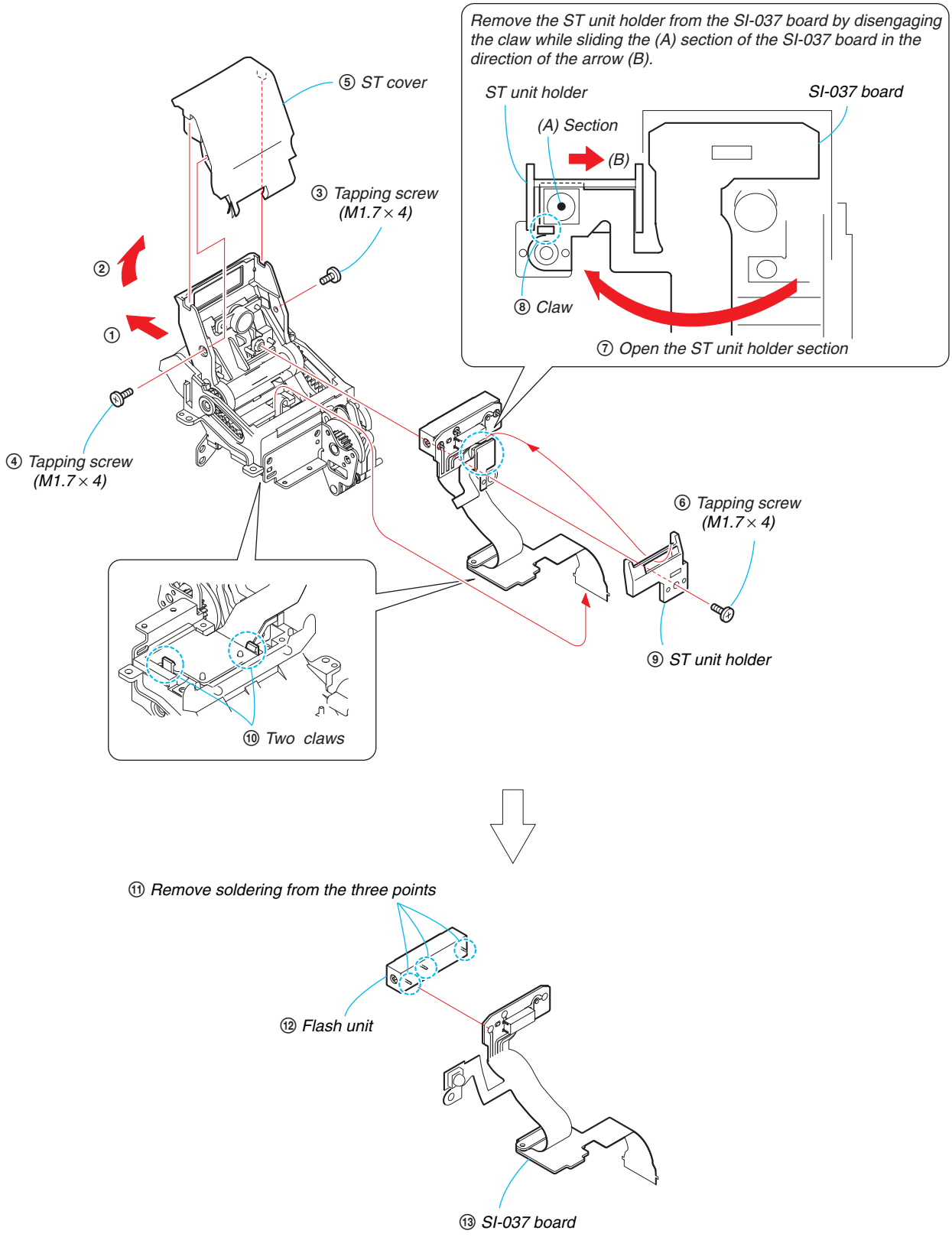
2-5. ST CABINET ASSEMBLY


② Tapping screw (M1.7 × 4)
③ ST blind cover
④ Four tapping screws (M1.7 × 4)
⑥ ST section
⑤ ST cabinet assembly
① AS-050 flexible board (10P)

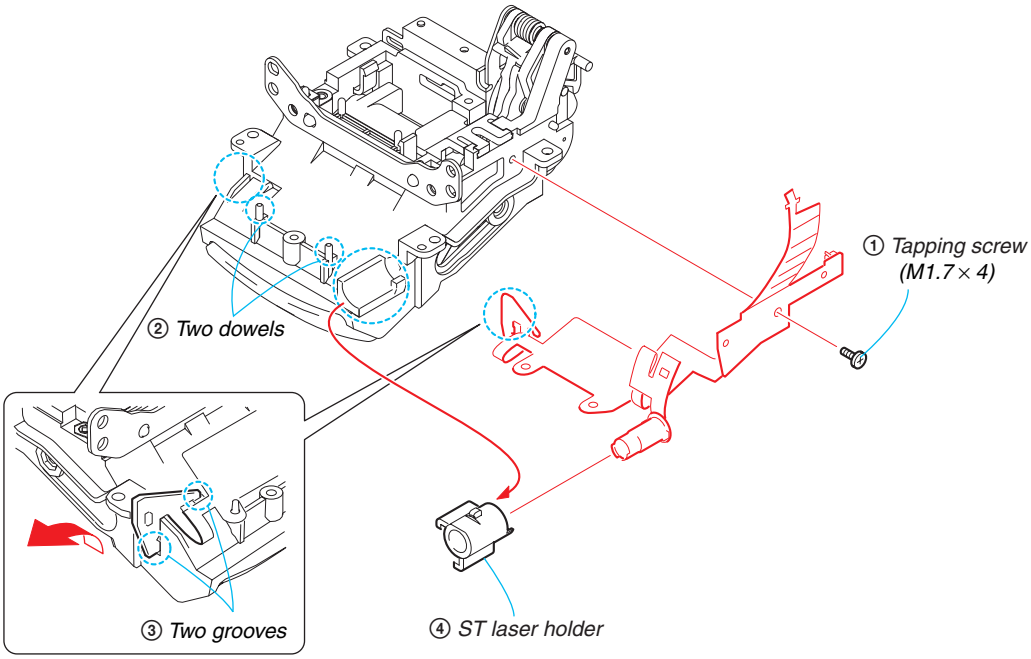
2-6. MT-067 BOARD

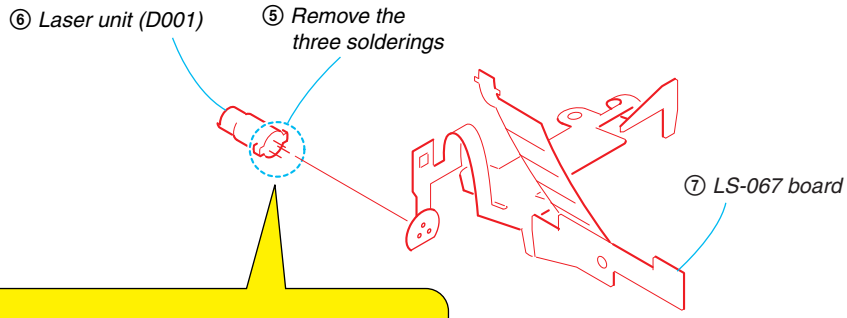

① Three tapping screws (M1.7 × 4)
② Claw
③ STFPC cover
④ Screw (M1.7 × 2), grip
Stroboscope motor
⑥ Remove the two solderings.
⑨ MT-067 board
⑤ Screw (M1.7 × 2), grip
⑦ Stroboscope motor
⑧ Three claws

2-7. SI-037 BOARD, FLASH UNIT


Remove the ST unit holder from the SI-037 board by disengaging the claw while sliding the (A) section of the SI-037 board in the direction of the arrow (B).
ST unit holder
SI-037 board
(A) Section
(B)
⑧ Claw
⑦ Open the ST unit holder section
⑤ ST cover
③ Tapping screw (M1.7× 4)
②
①
④ Tapping screw (M1.7× 4)
⑥ Tapping screw (M1.7× 4)
⑨ ST unit holder
⑩ Two claws
⑪ Remove soldering from the three points
⑫ Flash unit
⑬ SI-037 board

2-8. LS-067 BOARD, LASER UNIT

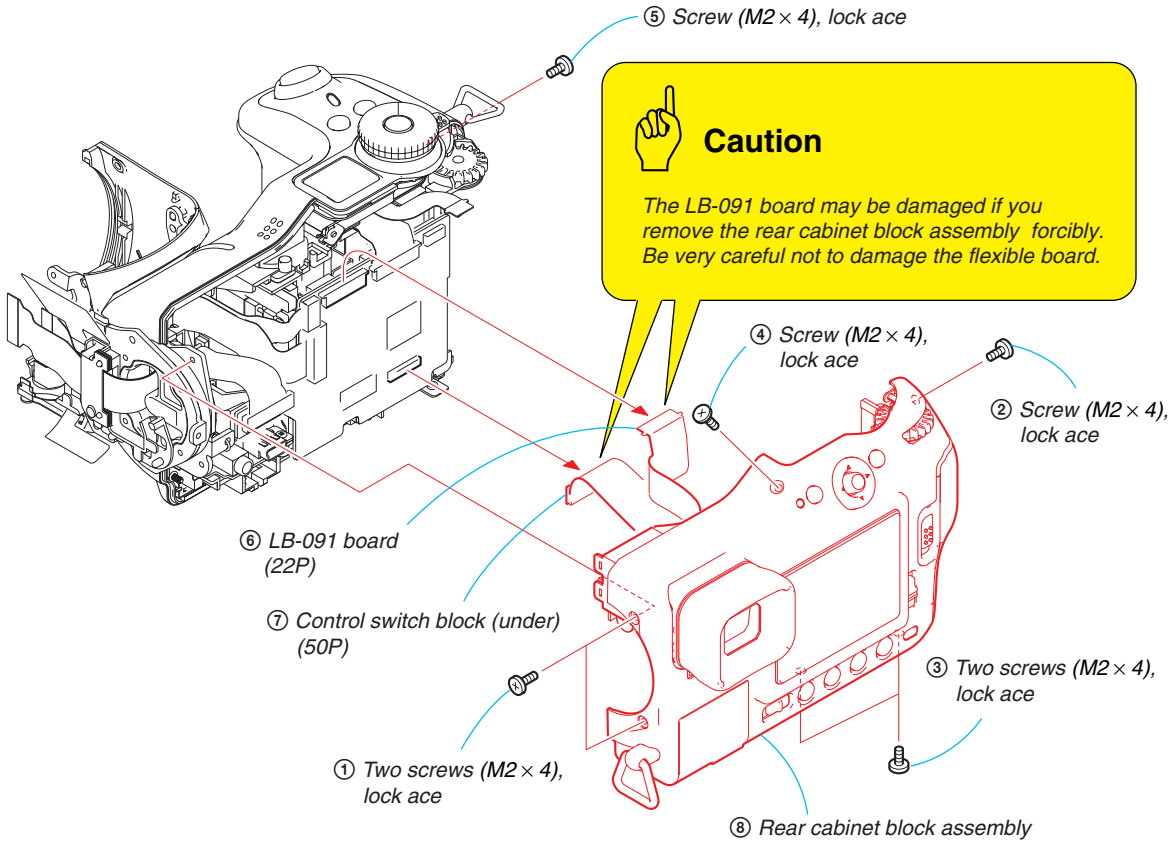




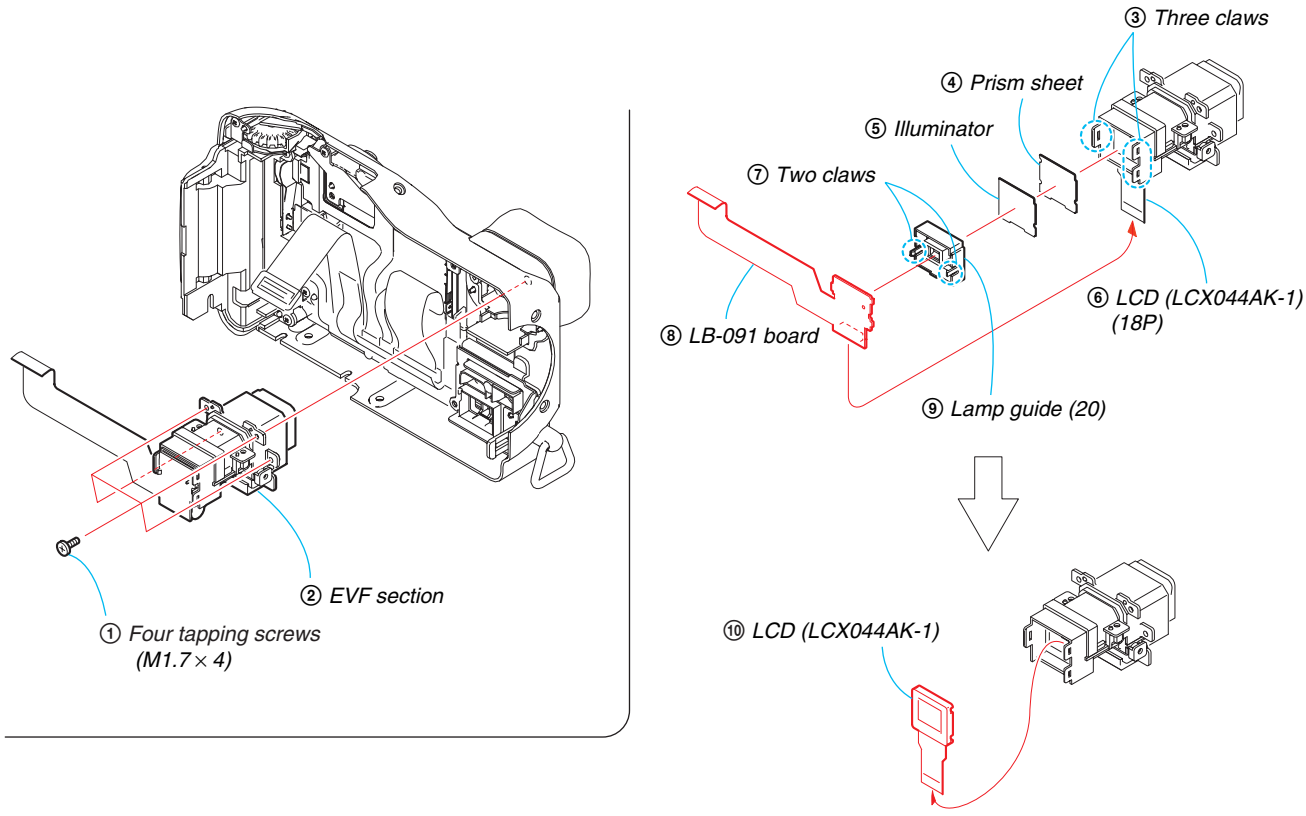
Caution

When soldering the laser unit on the LS-067 board, observe the following things.
(Refer to Service Note (page 1-2)).
Observe the following conditions of temperature and time of soldering.
Temperature of soldering iron : 350 °C
Time of contacting the soldering : 3 seconds
iron with the solder
The laser diode may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

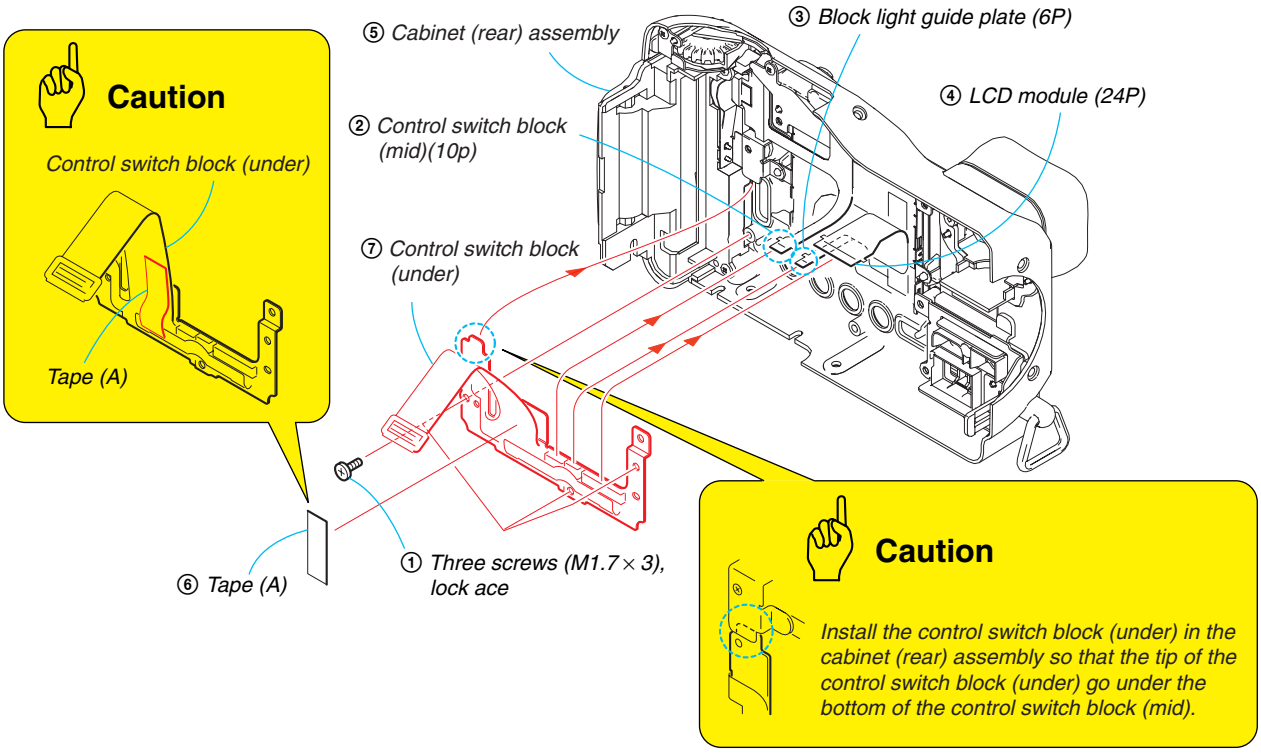
2-9. REAR CABINET BLOCK ASSEMBLY


⑤ Screw (M2 × 4), lock ace
Caution
The LB-091 board may be damaged if you remove the rear cabinet block assembly forcibly. Be very careful not to damage the flexible board.
④ Screw (M2 × 4), lock ace
② Screw (M2 × 4), lock ace
⑥ LB-091 board (22P)
⑦ Control switch block (under) (50P)
③ Two screws (M2 × 4), lock ace
① Two screws (M2 × 4), lock ace
⑧ Rear cabinet block assembly

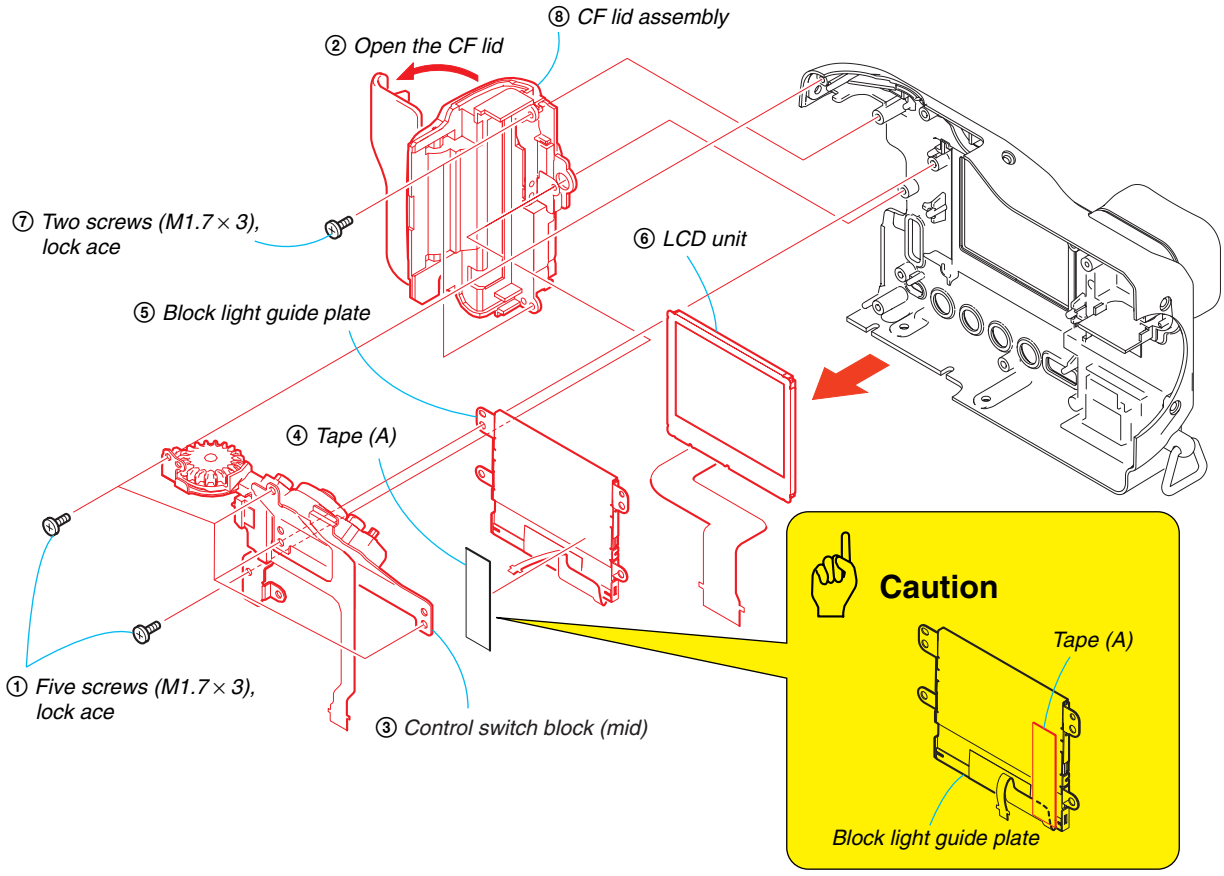
2-10. EVF SECTION



2-11. CONTROL SWITCH BLOCK (UNDER)


Caution
Control switch block (under)
Tape (A)
⑤ Cabinet (rear) assembly
③ Block light guide plate (6P)
④ LCD module (24P)
② Control switch block (mid)(10p)
⑦ Control switch block (under)
⑥ Tape (A)
① Three screws (M1.7 × 3), lock ace
Caution
Install the control switch block (under) in the cabinet (rear) assembly so that the tip of the control switch block (under) go under the bottom of the control switch block (mid).

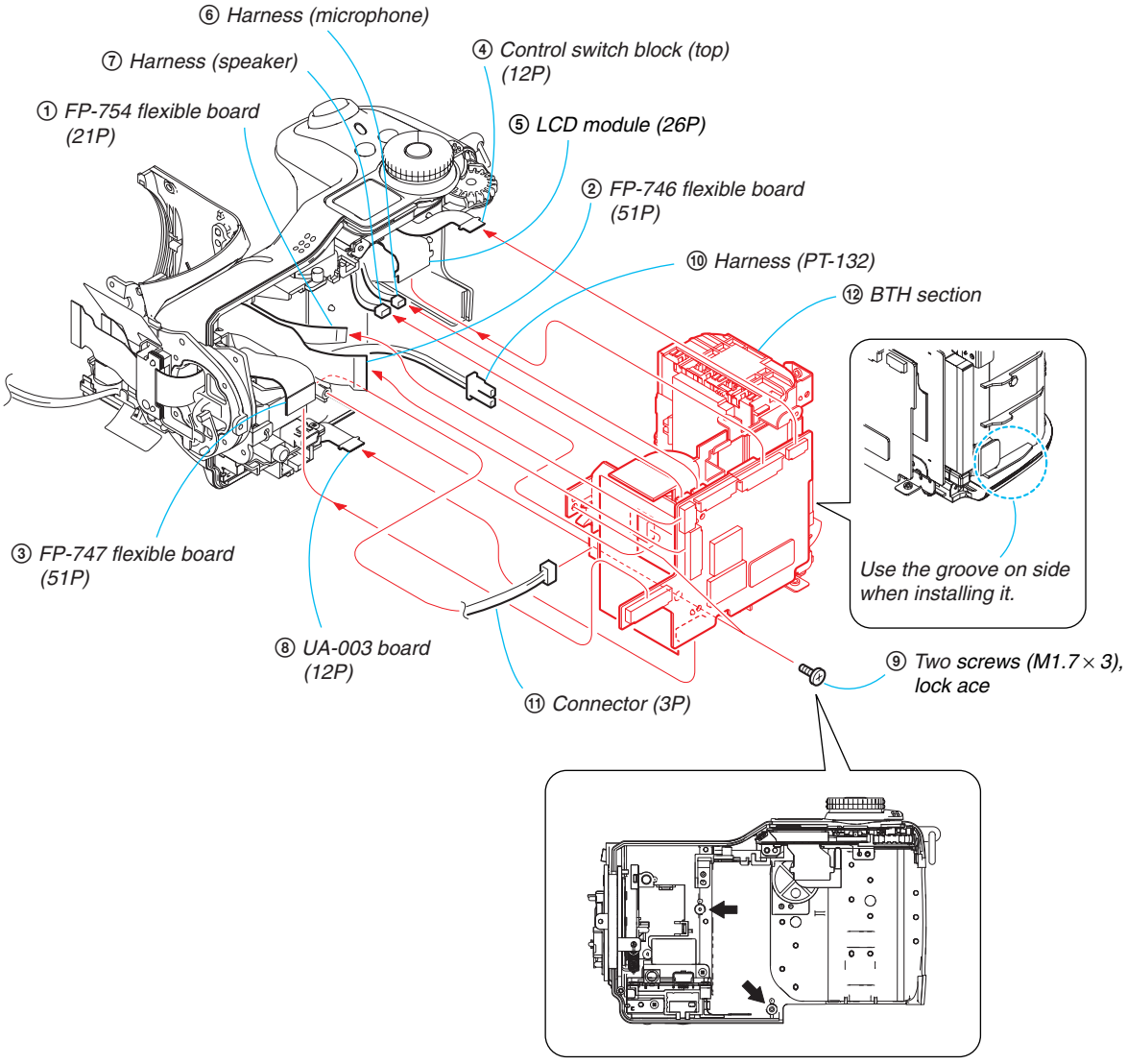
2-12. CONTROL SWITCH BLOCK (MID), LCD UNIT


⑧ CF lid assembly
② Open the CF lid
⑦ Two screws (M1.7 × 3), lock ace
⑥ LCD unit
⑤ Block light guide plate
④ Tape (A)
① Five screws (M1.7 × 3), lock ace
③ Control switch block (mid)
Caution
Tape (A)
Block light guide plate

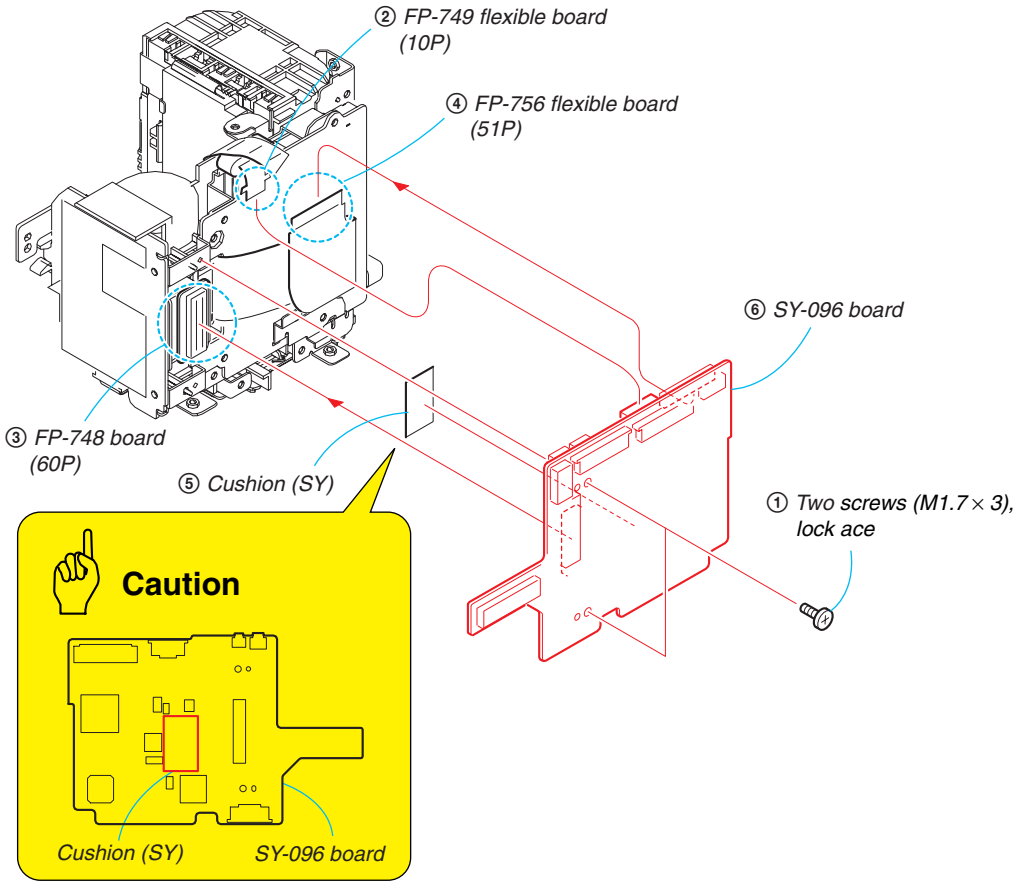
2-13. BTH SECTION

Caution

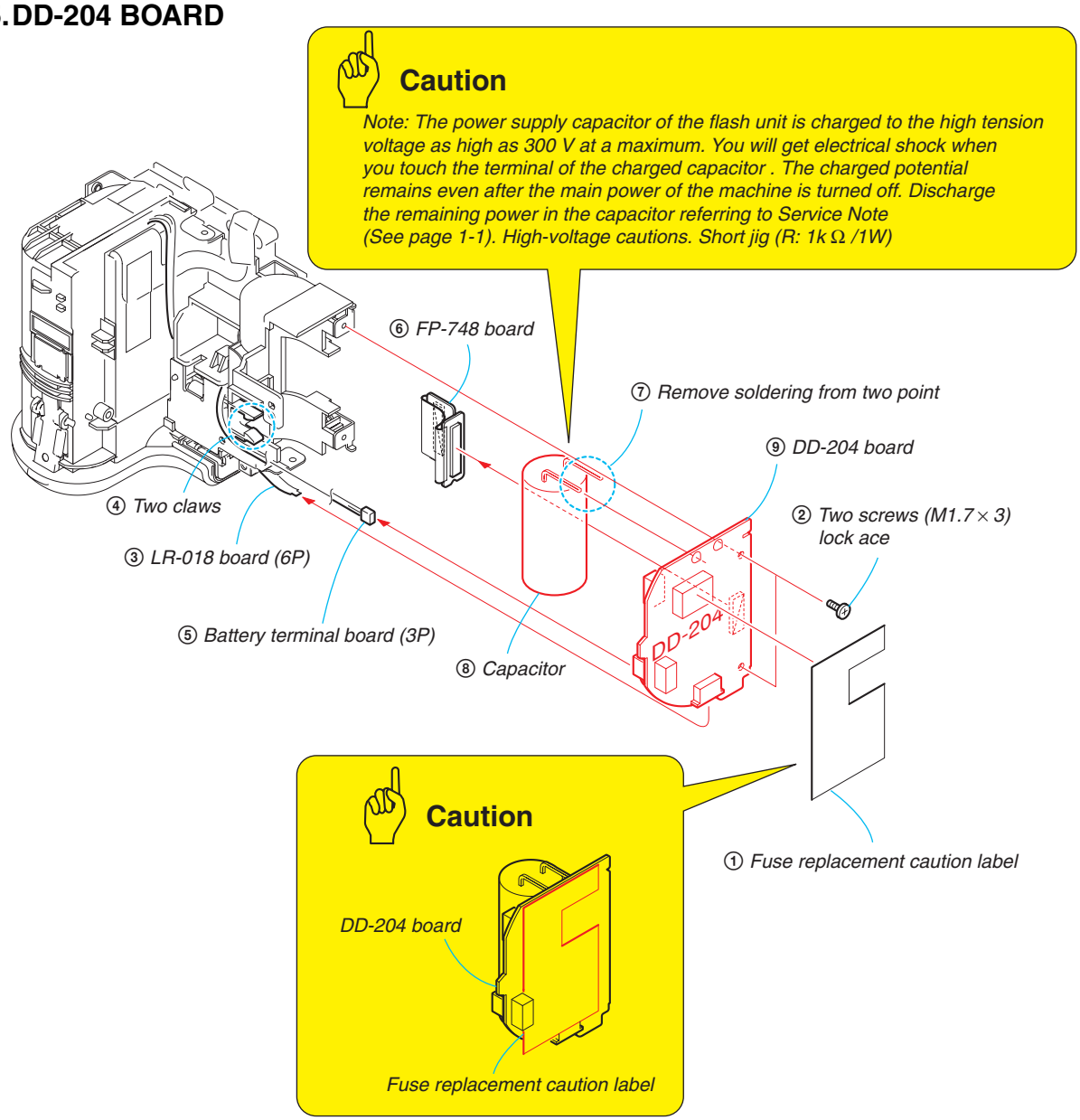
Note: When installing, be careful not to pinch the flexible board or harness during installation.


⑥ Harness (microphone)
⑦ Harness (speaker)
④ Control switch block (top) (12P)
① FP-754 flexible board (21P)
⑤ LCD module (26P)
② FP-746 flexible board (51P)
⑩ Harness (PT-132)
⑫ BTH section
Use the groove on side when installing it.
③ FP-747 flexible board (51P)
⑧ UA-003 board (12P)
⑨ Two screws (M1.7 × 3), lock ace
⑪ Connector (3P)

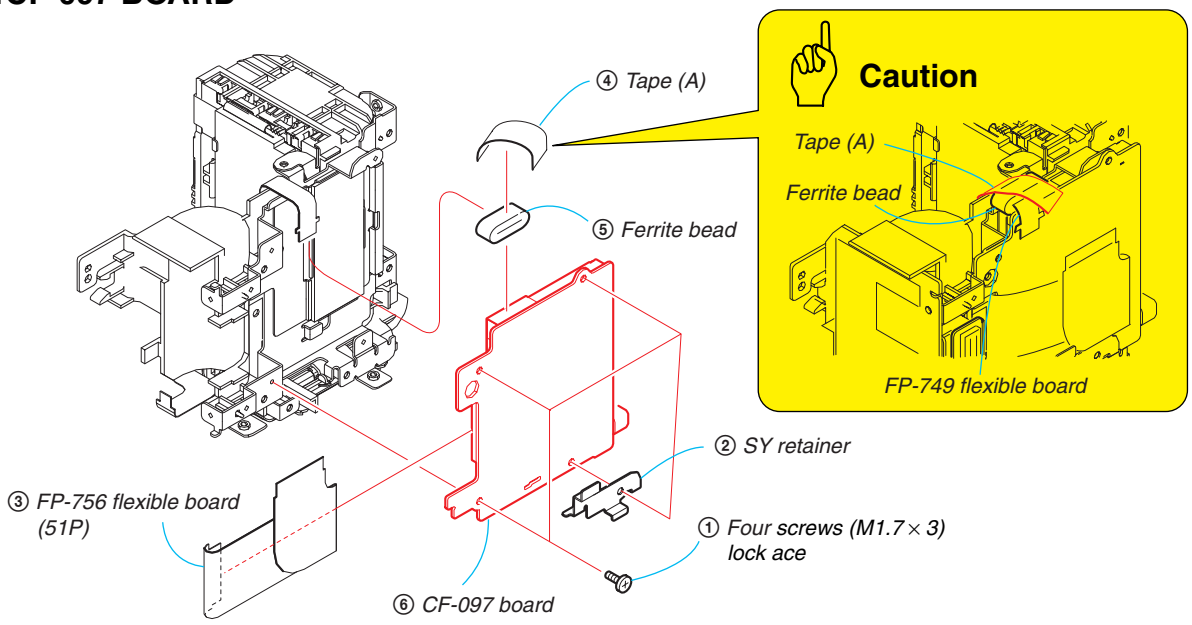
2-14. SY-096 BOARD



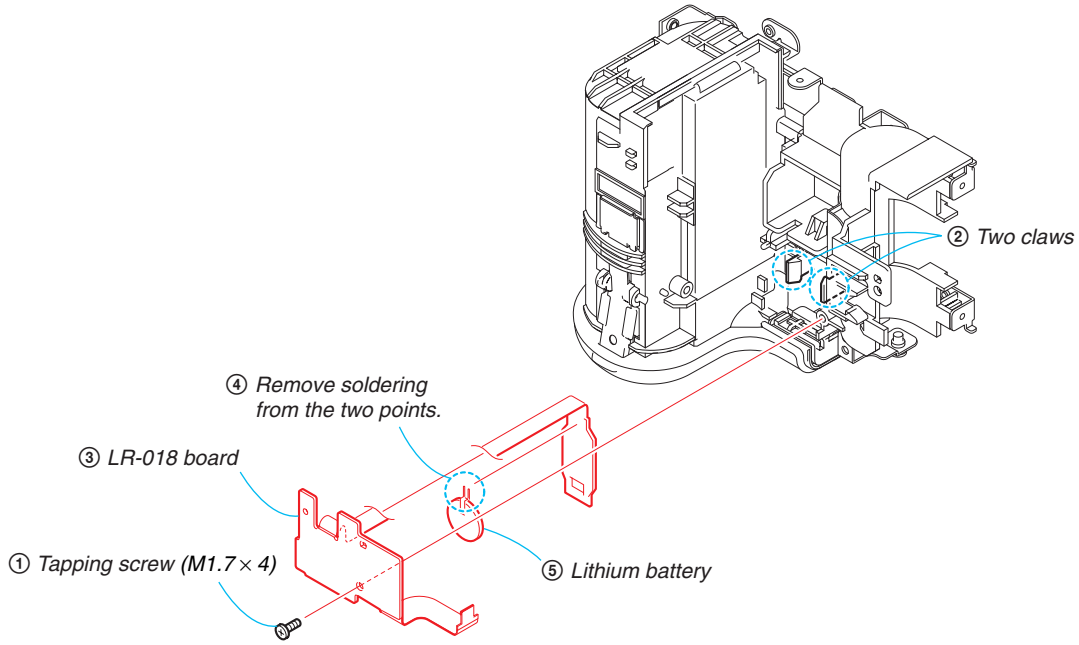
2-15. DD-204 BOARD


Caution
Note: The power supply capacitor of the flash unit is charged to the high tension voltage as high as 300 V at a maximum. You will get electrical shock when you touch the terminal of the charged capacitor . The charged potential remains even after the main power of the machine is turned off. Discharge the remaining power in the capacitor referring to Service Note (See page 1-1). High-voltage cautions. Short jig (R: 1k Ω /1W)
⑥ FP-748 board
⑦ Remove soldering from two point
⑨ DD-204 board
④ Two claws
② Two screws (M1.7 × 3) lock ace
③ LR-018 board (6P)
⑤ Battery terminal board (3P)
⑧ Capacitor
DD-204
① Fuse replacement caution label
Caution
DD-204 board
Fuse replacement caution label

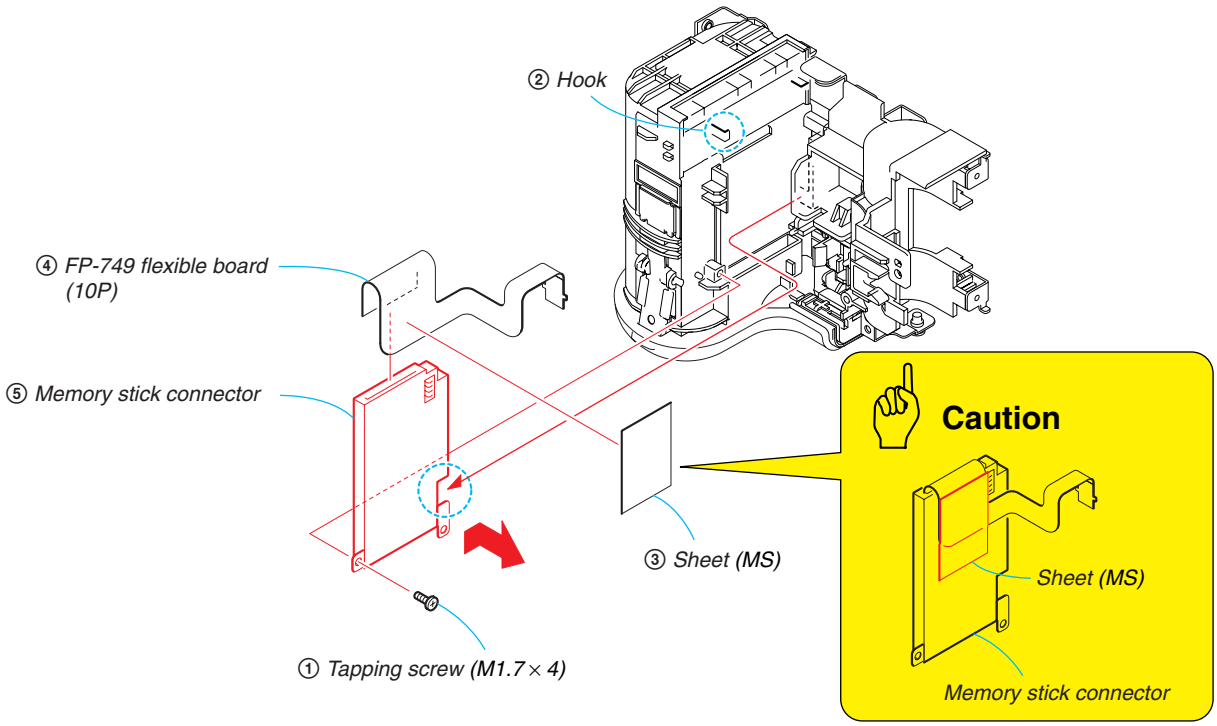
2-16. CF-097 BOARD



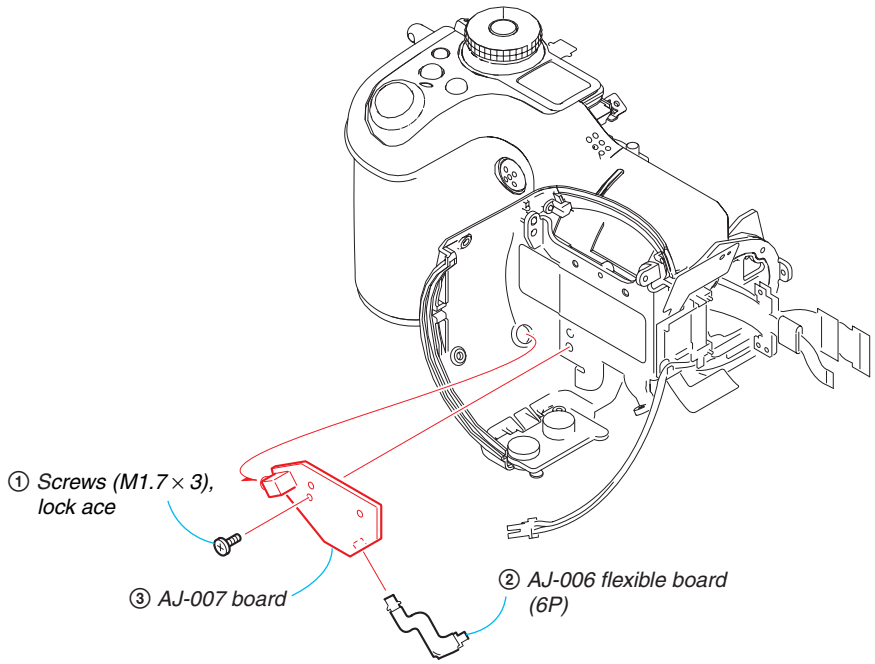
2-17. LR-018 BOARD, LITHIUM BATTERY



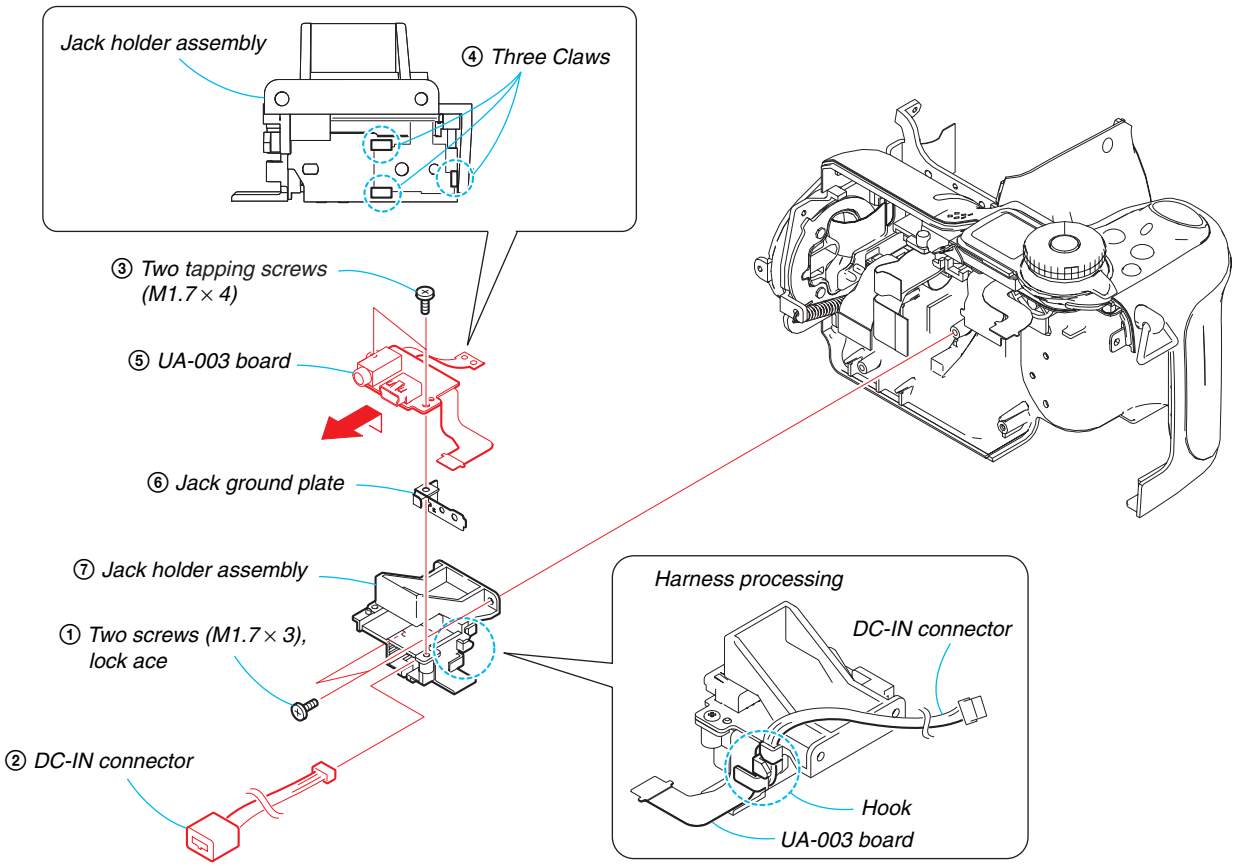
2-18. MEMORY STICK CONNECTOR



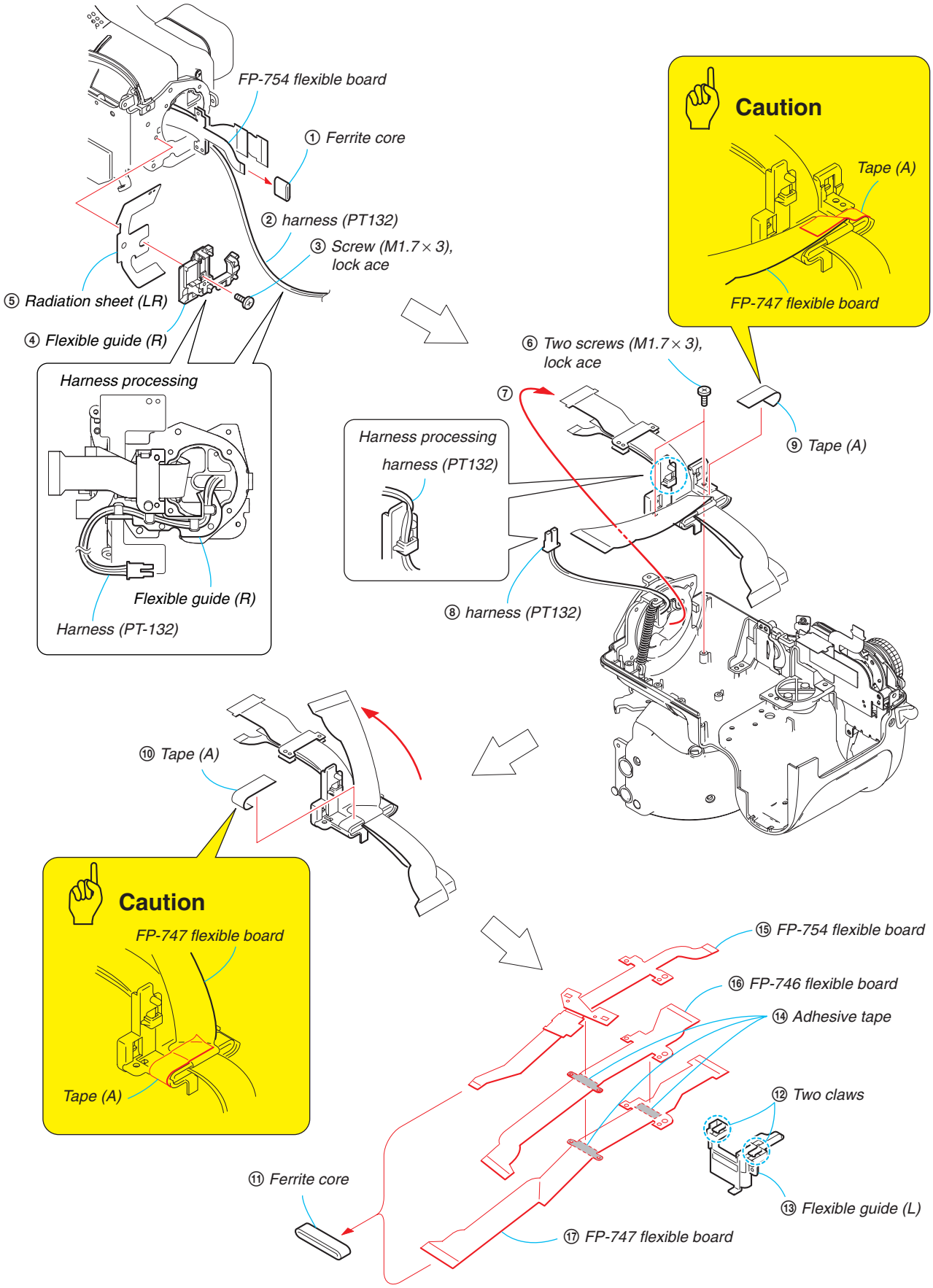
2-19. AJ-007 BOARD



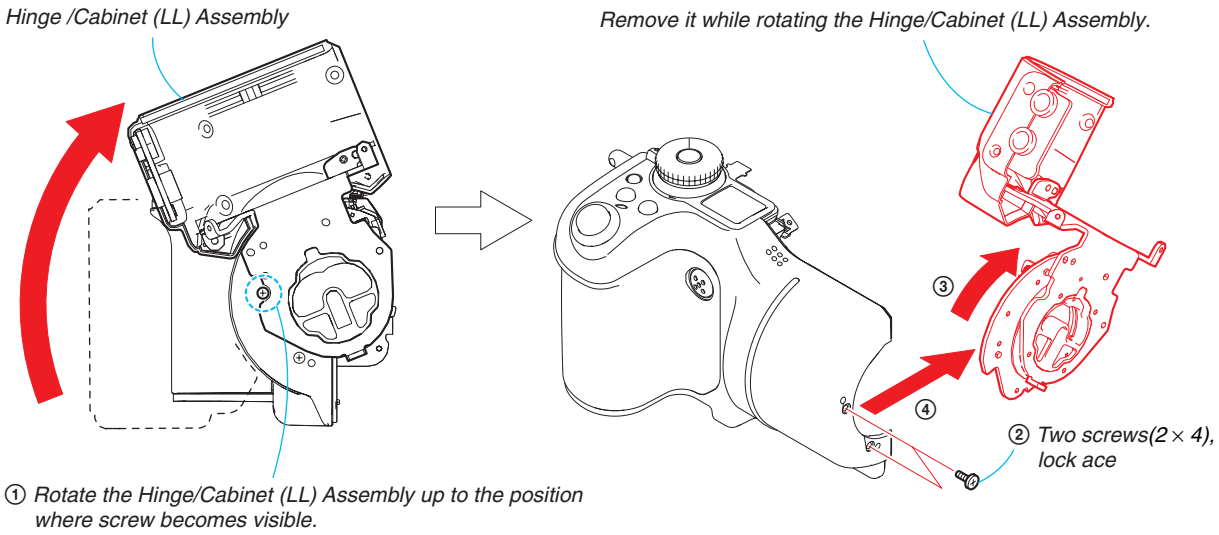
2-20. DC-IN CONNECTOR, UA-003 BOARD



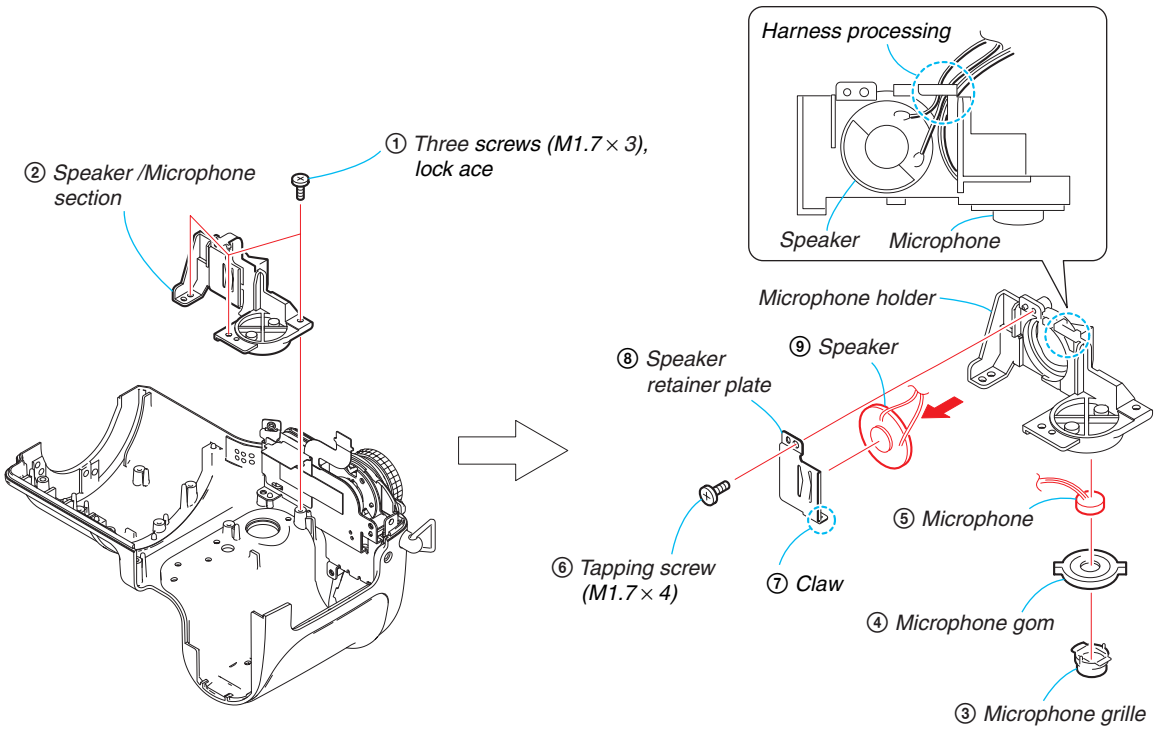
2-21. FP-747/746/754 FLEXIBLE BOARD



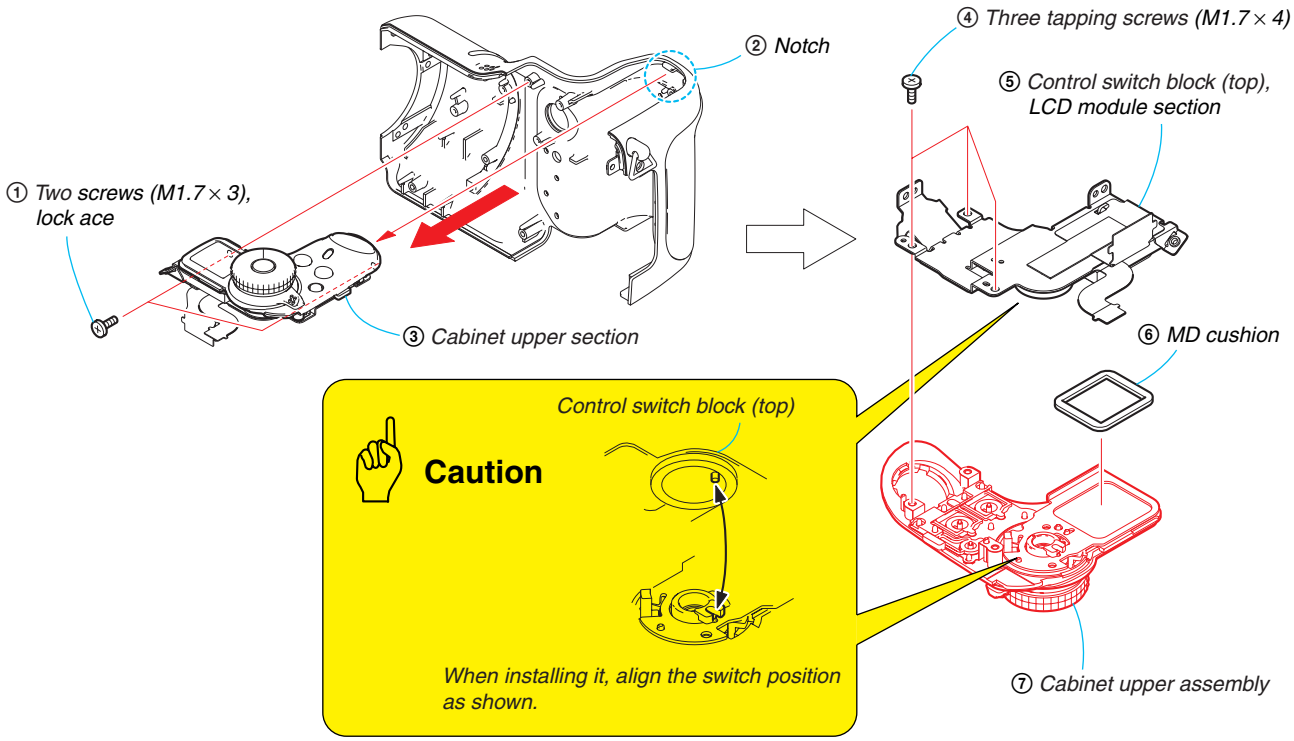
2-22. HINGE/CABINET (LL) ASSEMBLY


Hinge /Cabinet (LL) Assembly
Remove it while rotating the Hinge/Cabinet (LL) Assembly.
③
④
② Two screws(2 × 4), lock ace
① Rotate the Hinge/Cabinet (LL) Assembly up to the position where screw becomes visible.

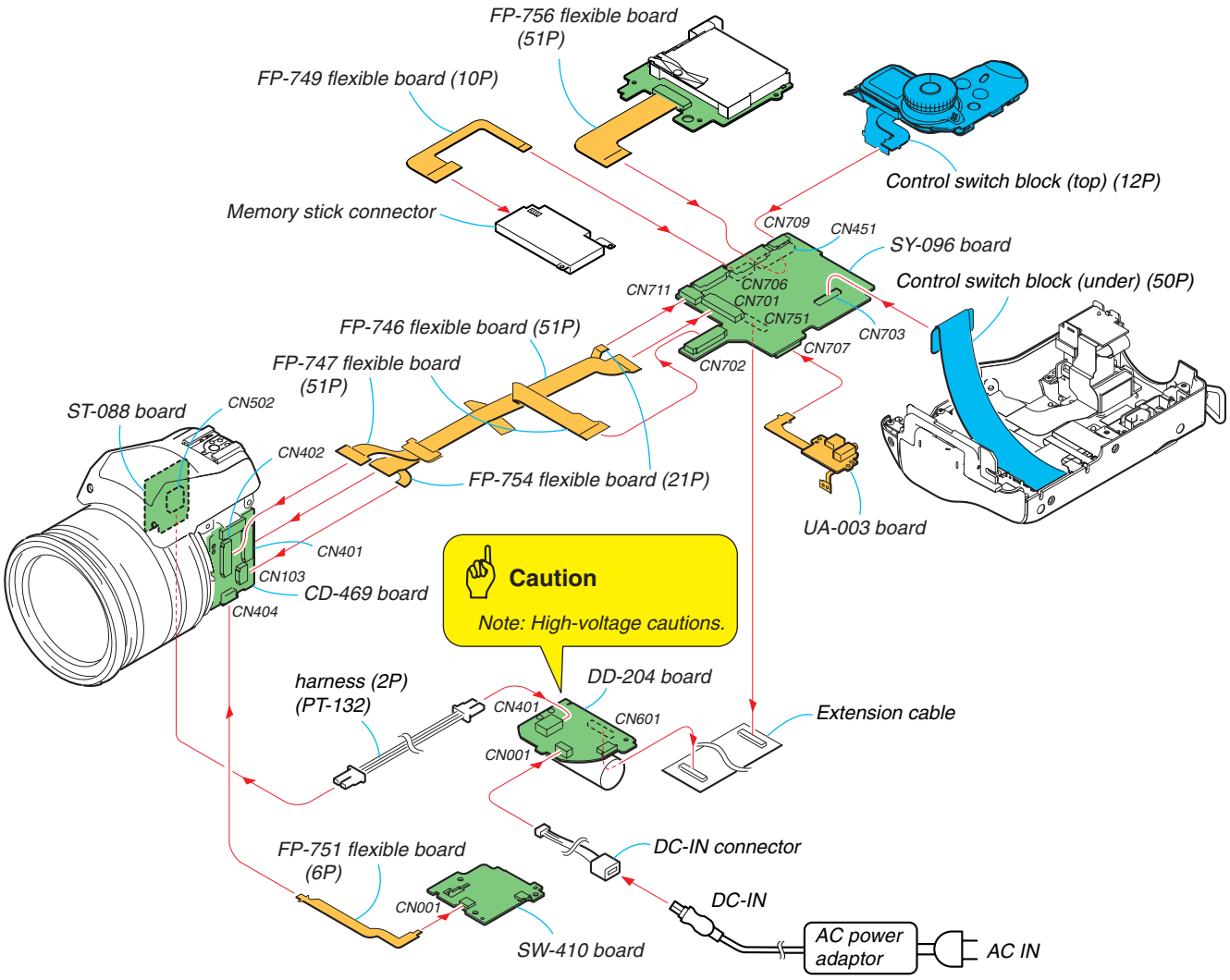
2-23. SPEAKER/MICROPHONE SECTION



2-24. CABINET UPPER ASSEMBLY


① Two screws (M1.7 × 3), lock ace
② Notch
③ Cabinet upper section
④ Three tapping screws (M1.7 × 4)
⑤ Control switch block (top), LCD module section
⑥ MD cushion
⑦ Cabinet upper assembly
Caution
Control switch block (top)
When installing it, align the switch position as shown.

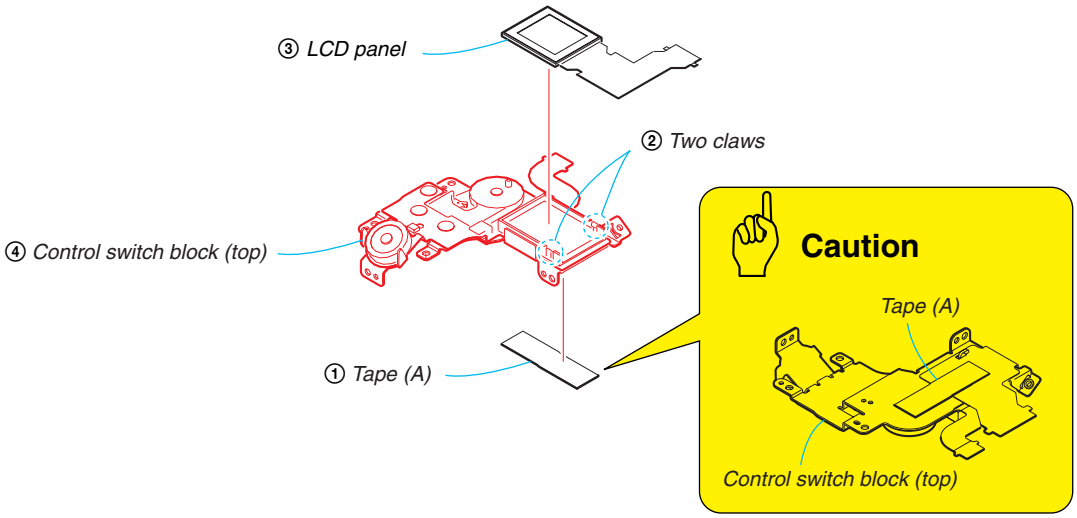
[SERVICE POSITION (SY-096 BOARD)]



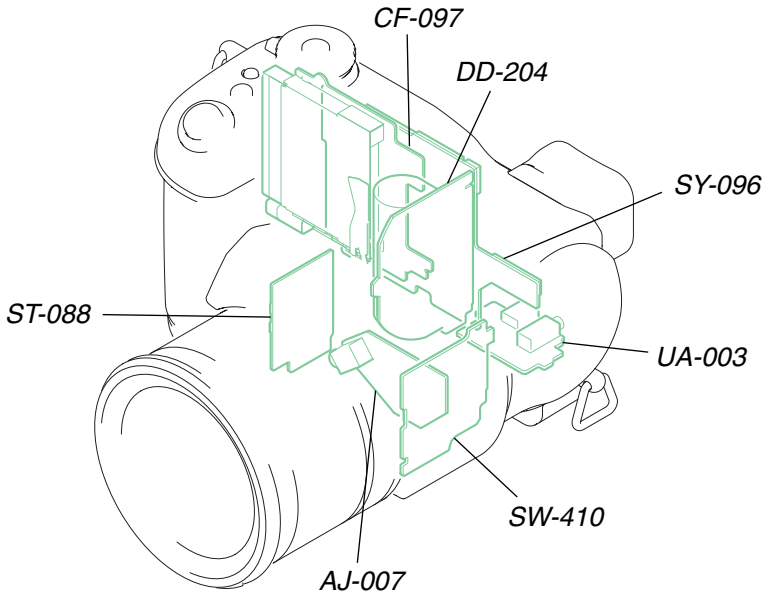
PROCEDURE OF REMOVING THE SY-096 BOARD (SERVICE POSITION)

① 2-1. CABINET (LR) ASSEMBLY, SW-410 BOARD ..... (page 2-2)
② 2-2. STROBOSCOPE BLOCK ASSEMBLY ..... (page 2-3)
③ 2-9. REAR CABINET BLOCK ASSEMBLY ..... (page 2-8)
④ 2-13. BTH SECTION ..... (page 2-10)
⑤ 2-14. SY-096 BOARD ..... (page 2-11)
⑥ 2-15. DD-204 BOARD ..... (page 2-12)
⑦ 2-16. CF-097 BOARD ..... (page 2-12)
⑧ 2-18. MEMORY STICK CONNECTOR ..... (page 2-13)
⑨ 2-20. DC-IN CONNECTOR,UA-003 BOARD ..... (page 2-14)
⑩ 2-21. FP-747/746/754 FLEXIBLE BOARD ..... (page 2-15)
⑪ 2-24. CABINET UPPER ASSEMBLY ..... (page 2-17)

2-25. CONTROL SWITCH BLOCK (TOP)

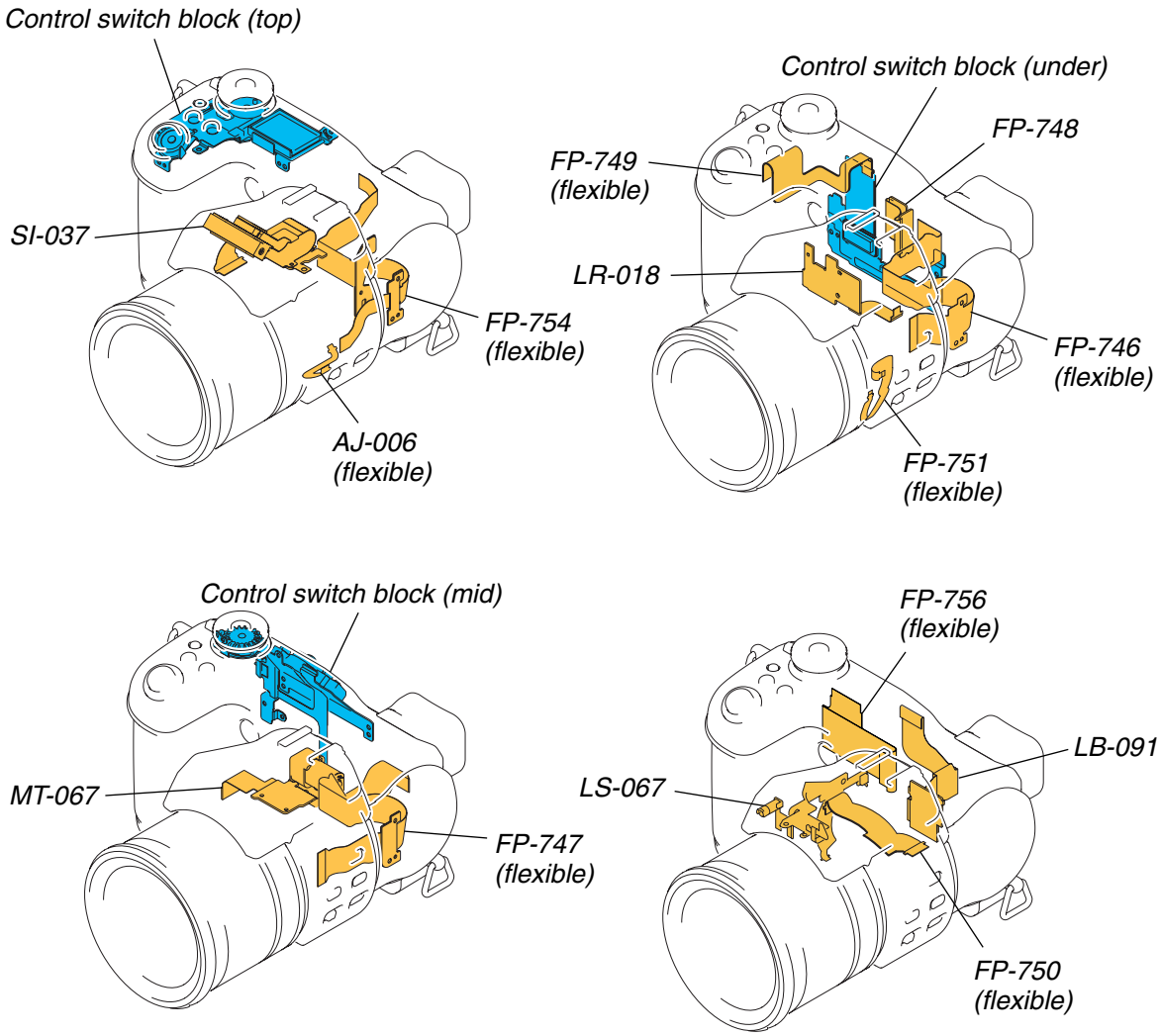


2-26. CIRCUIT BOARDS LOCATION



Board Name	Function
SY-096	CAMERA DSP, CAMERA SYSTEM CONTROL, CF DRIVE I/F, USB I/F, MODE CONTROL, AUDIO AMP, LCD DRIVER, EVF, LCD DRIVER, CONNECTOR, POWER SUPPLY
UA-003	AV, USB JACK
SW-410	FUNCTION KEY
AJ-007	JACK
ST-088	FLASH CONTROL
CF-097	CF CARD CONNECTOR
DD-204	DC/DC CONVERTER

2-27. CIRCUIT BOARDS AND FLEXIBLE BOARDS LOCATION



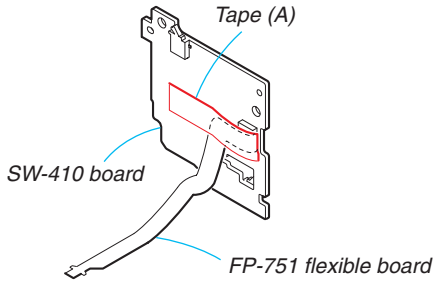
Board Name	Function
SI-037	FLASH, IR LED
MT-067	FLASH MOTOR
LS-067	AF LASER
LB-091	EVF, EVF BACK LIGHT
FP-748	CONNECTOR
LR-018	BATTERY, RESET SW

2003. 12. 8 Update

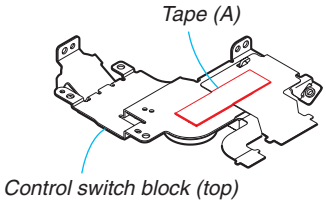
HELP

Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

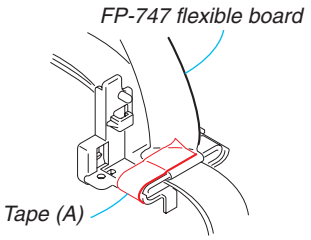
CABINET (LR) SECTION

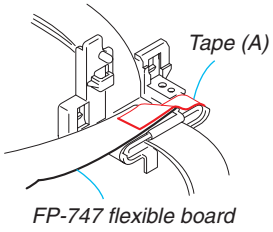


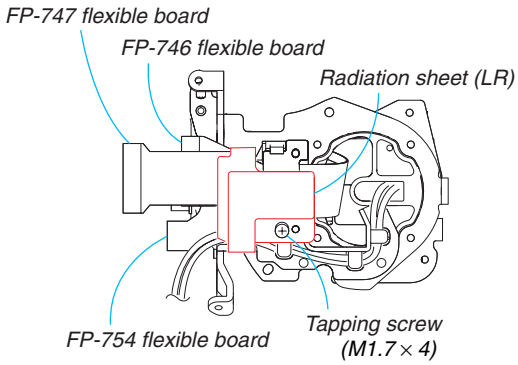
STROBOSCOPE SECTION

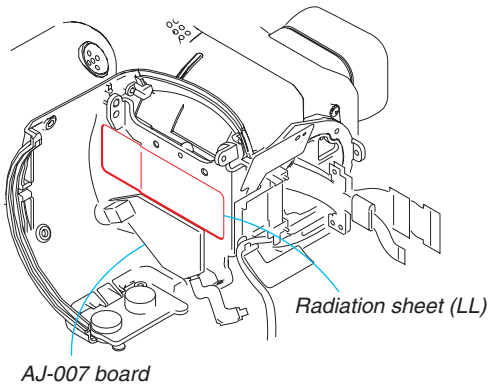


FRONT CABINET SECTION

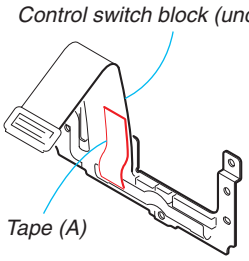


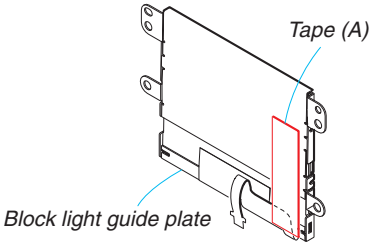




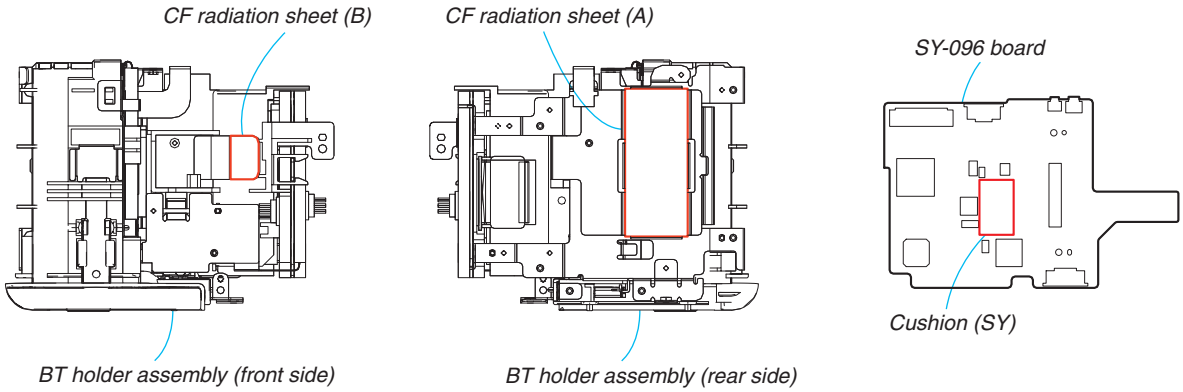


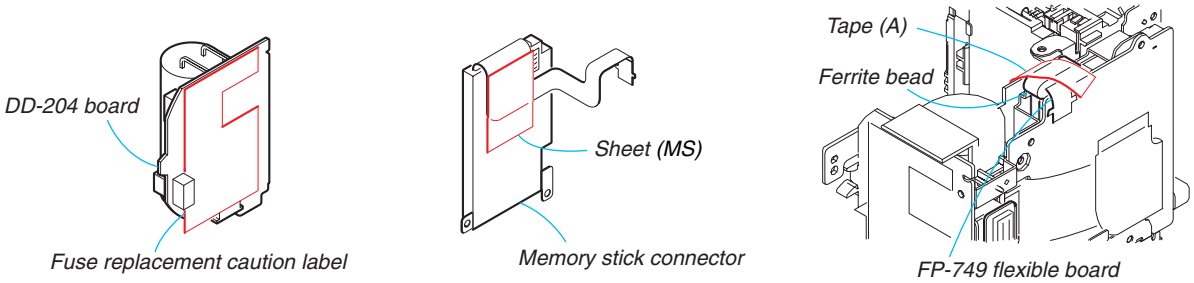
REAR CABINET SECTION





BTH SECTION


CF radiation sheet (B)
CF radiation sheet (A)
SY-096 board
BT holder assembly (front side)
BT holder assembly (rear side)
Cushion (SY)


DD-204 board
Fuse replacement caution label
Sheet (MS)
Memory stick connector
Tape (A)
Ferrite bead
FP-749 flexible board

3. BLOCK DIAGRAMS

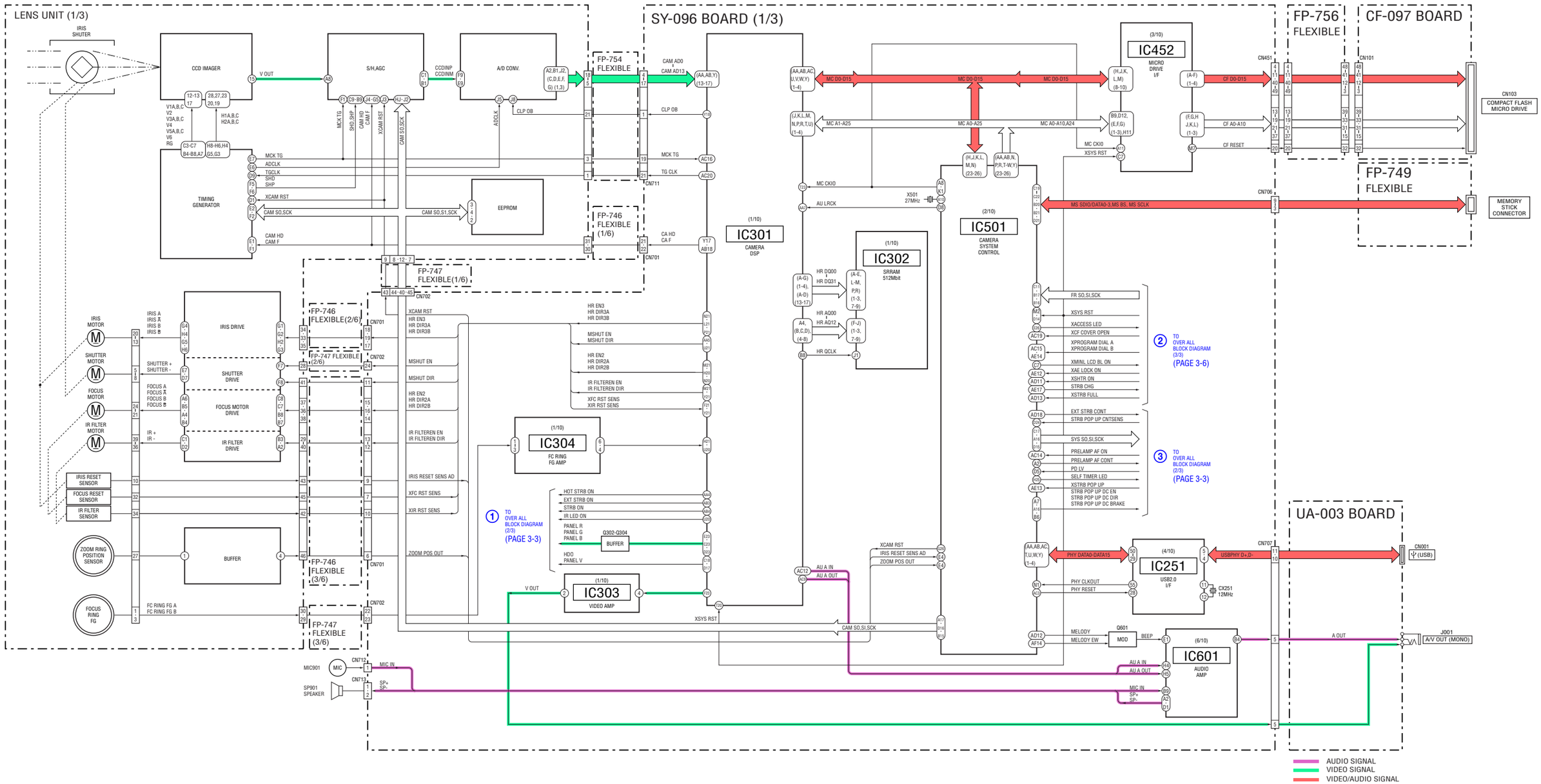
Link

OVERALL BLOCK DIAGRAM (1/3)	POWER BLOCK DIAGRAM (1/2)
OVERALL BLOCK DIAGRAM (2/3)	POWER BLOCK DIAGRAM (2/2)
OVERALL BLOCK DIAGRAM (3/3)	

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/3)

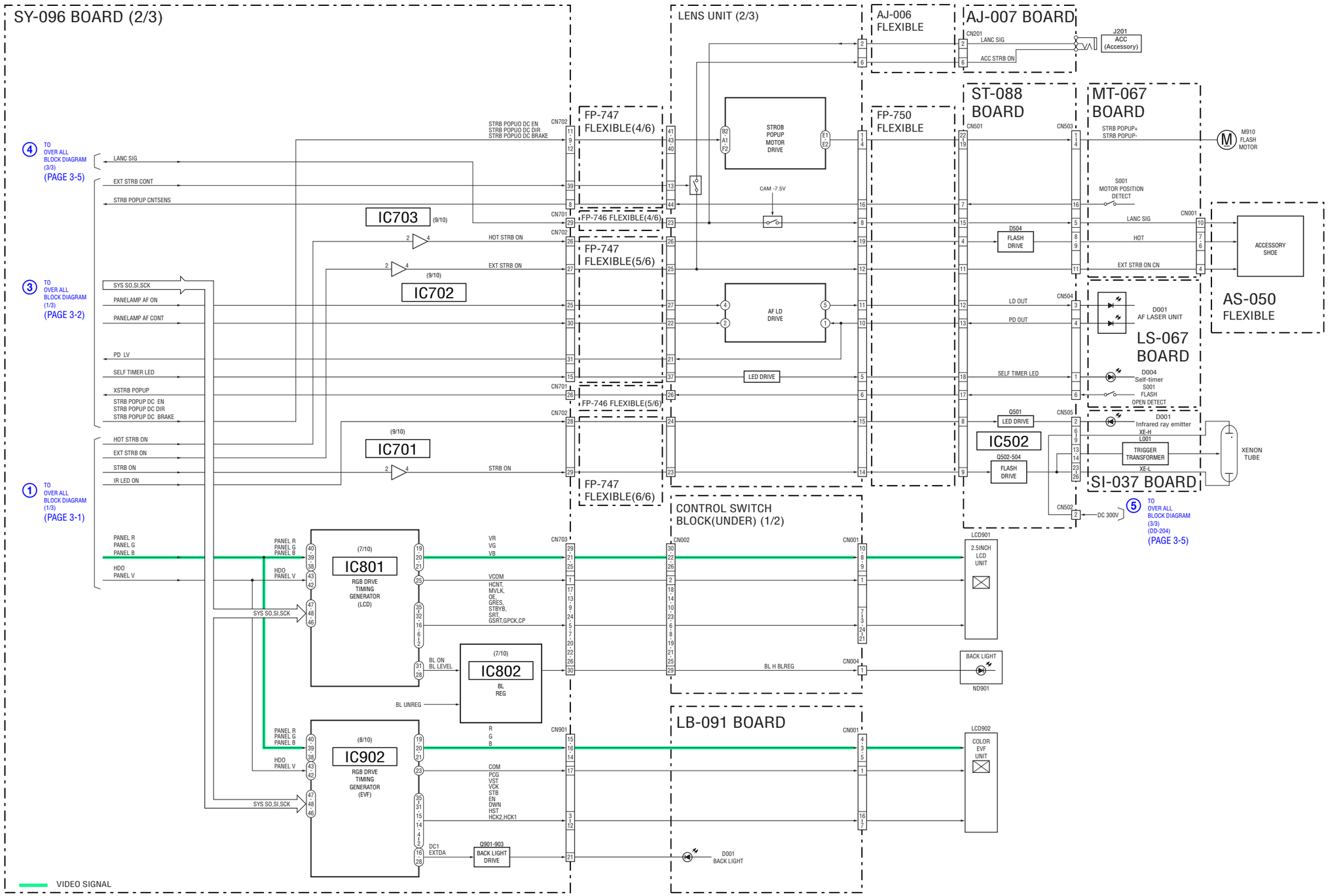
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

3-2. OVERALL BLOCK DIAGRAM (2/3)

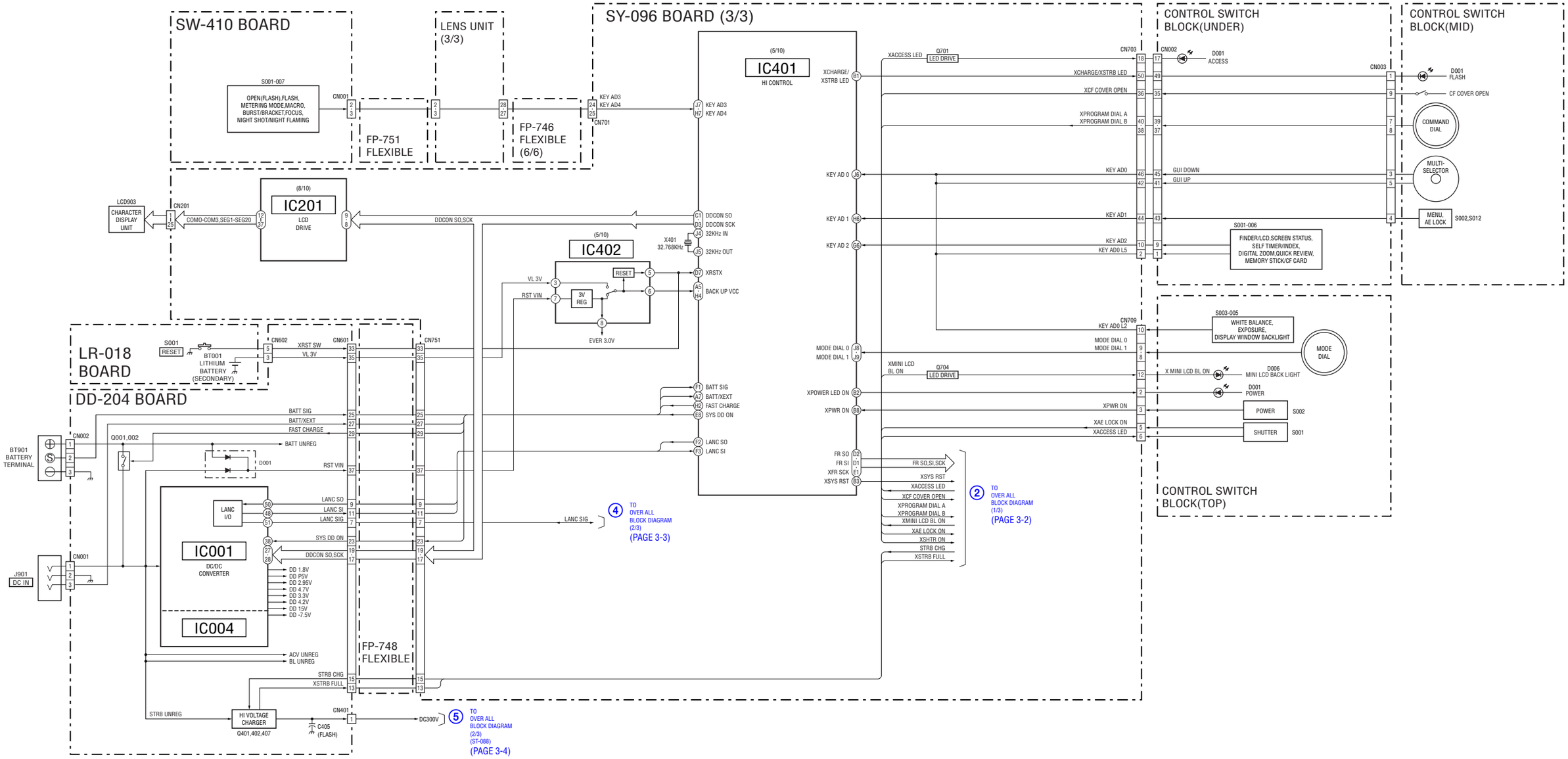
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

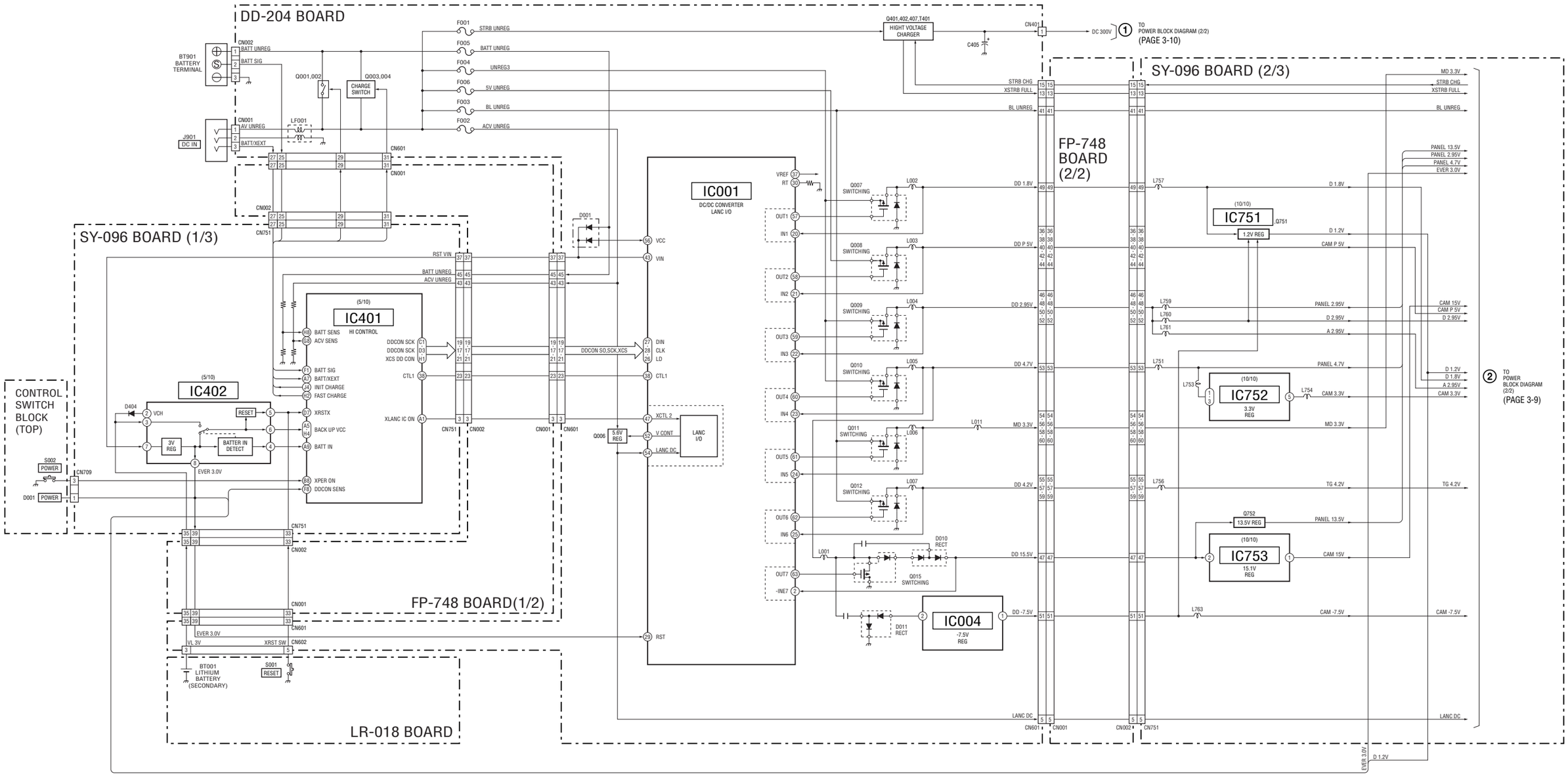
3-3. OVERALL BLOCK DIAGRAM (3/3)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

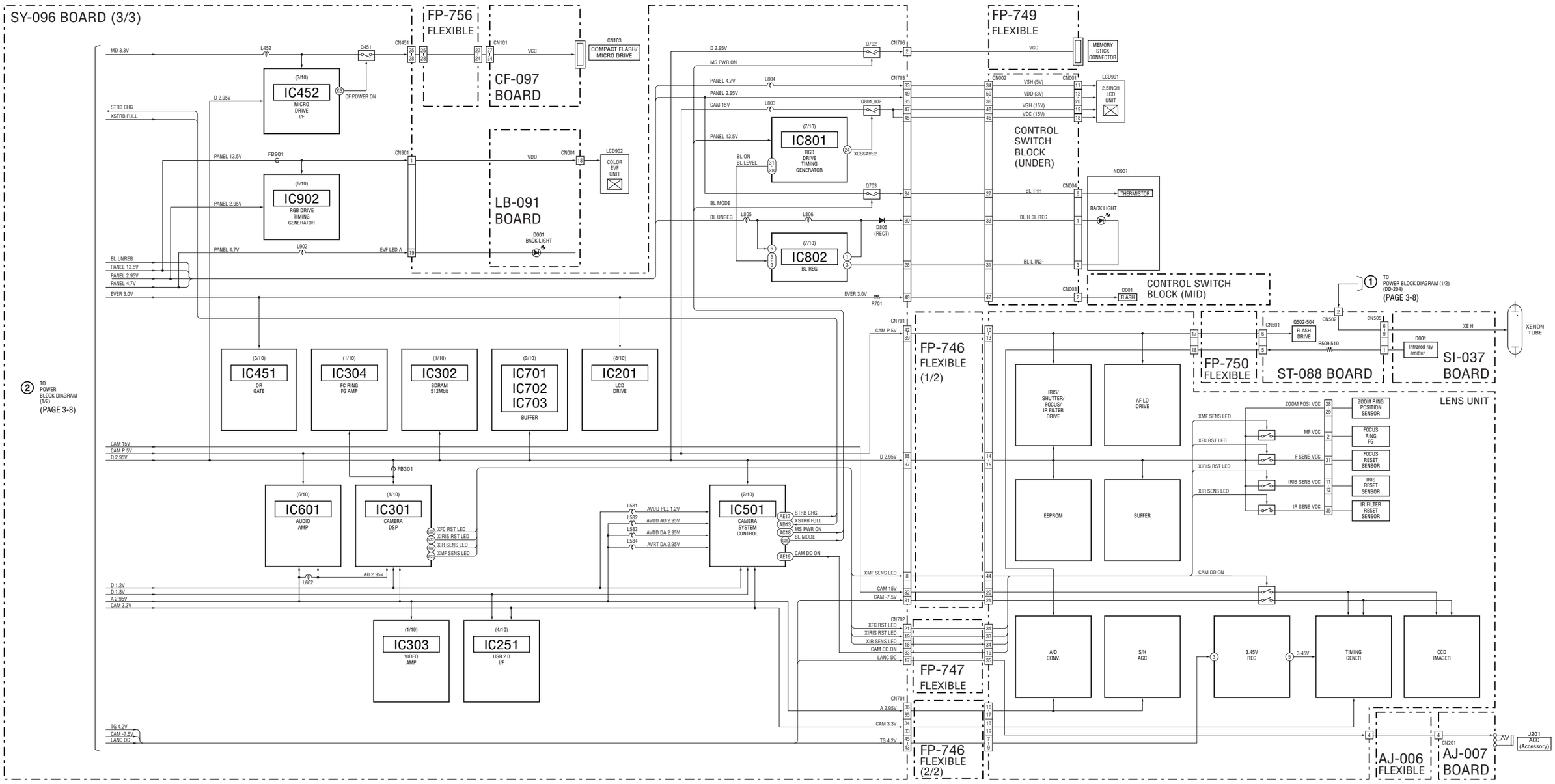
3-4. POWER BLOCK DIAGRAM (1/2) ( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

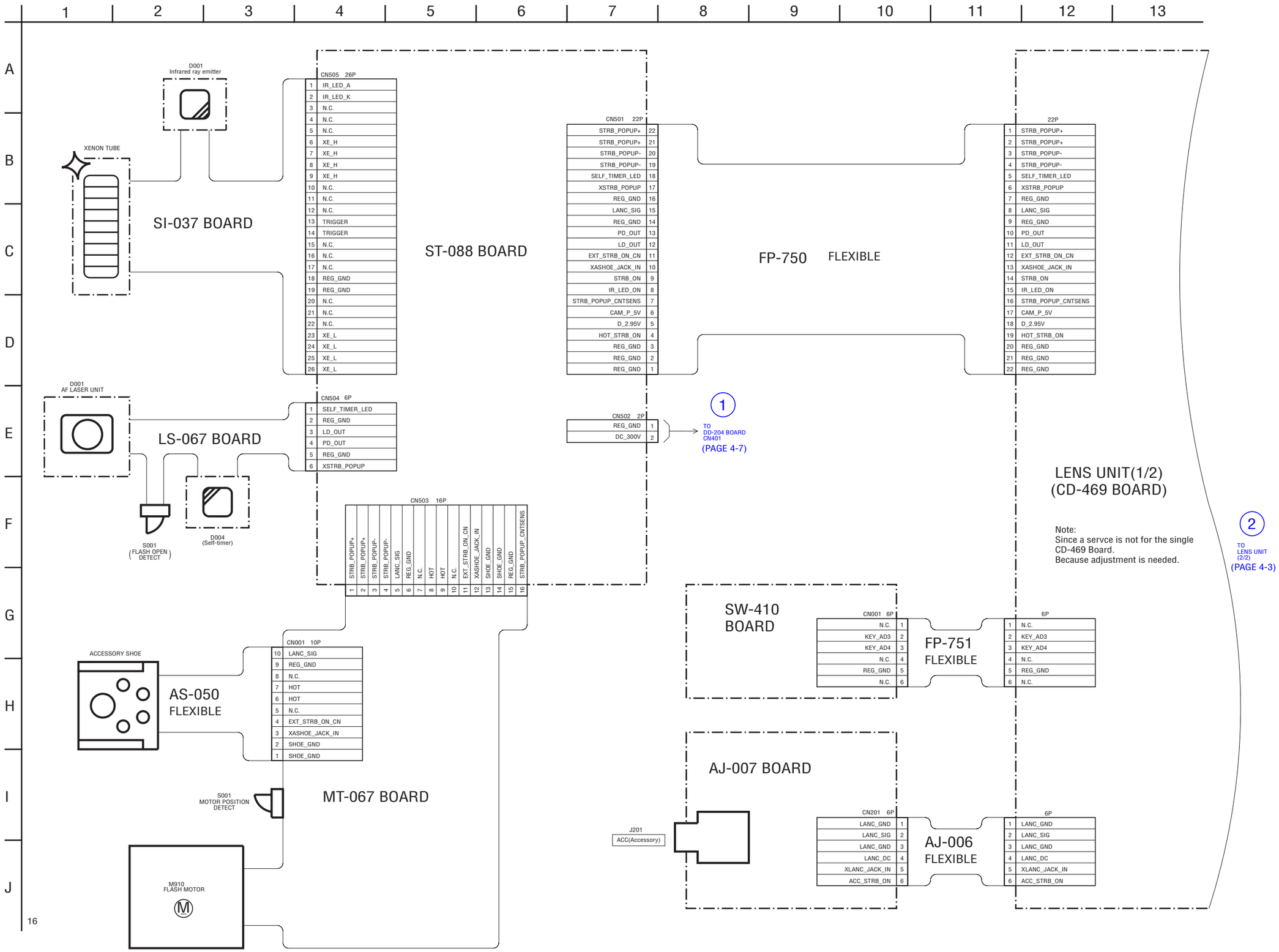
3-5. POWER BLOCK DIAGRAM (2/2)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

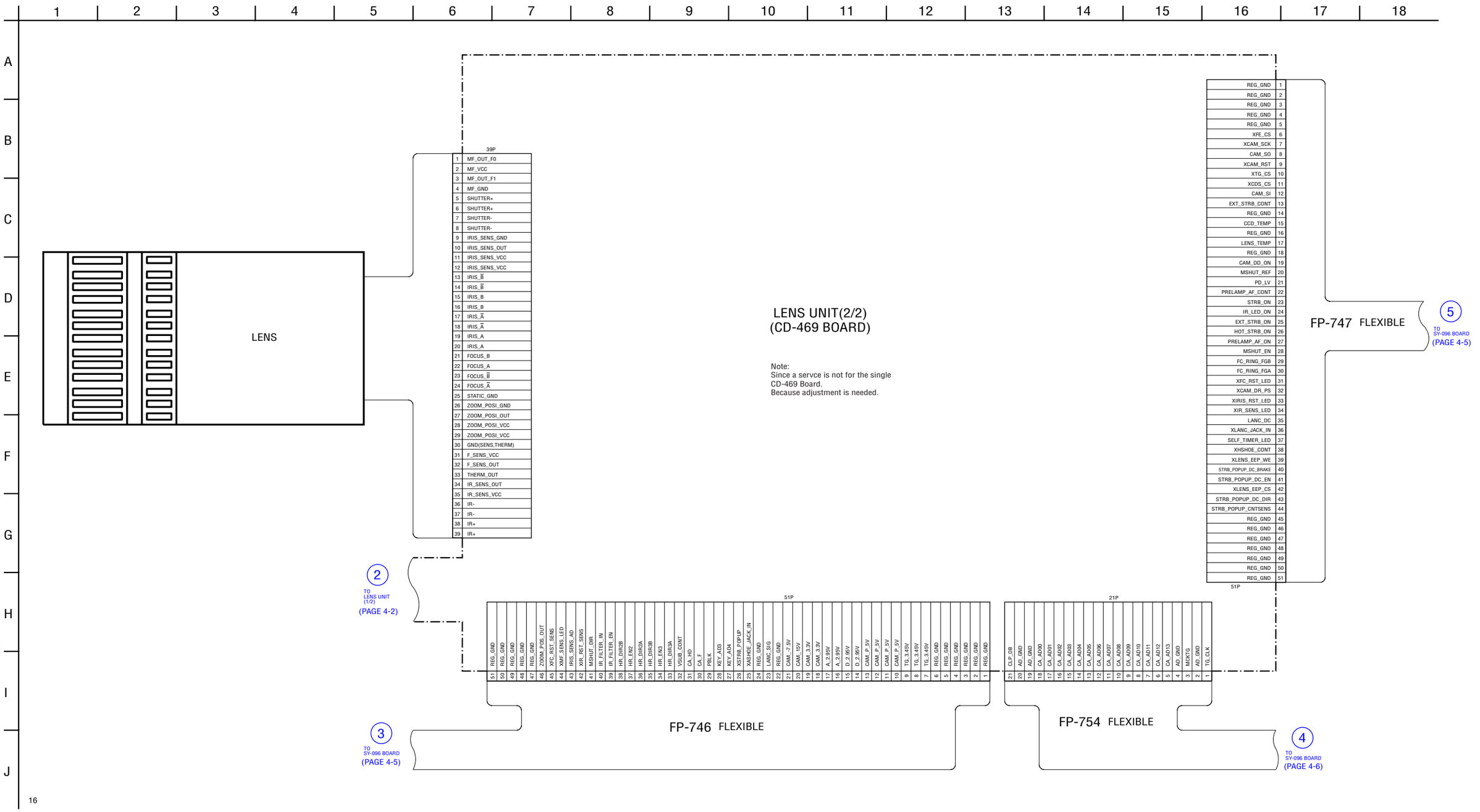


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

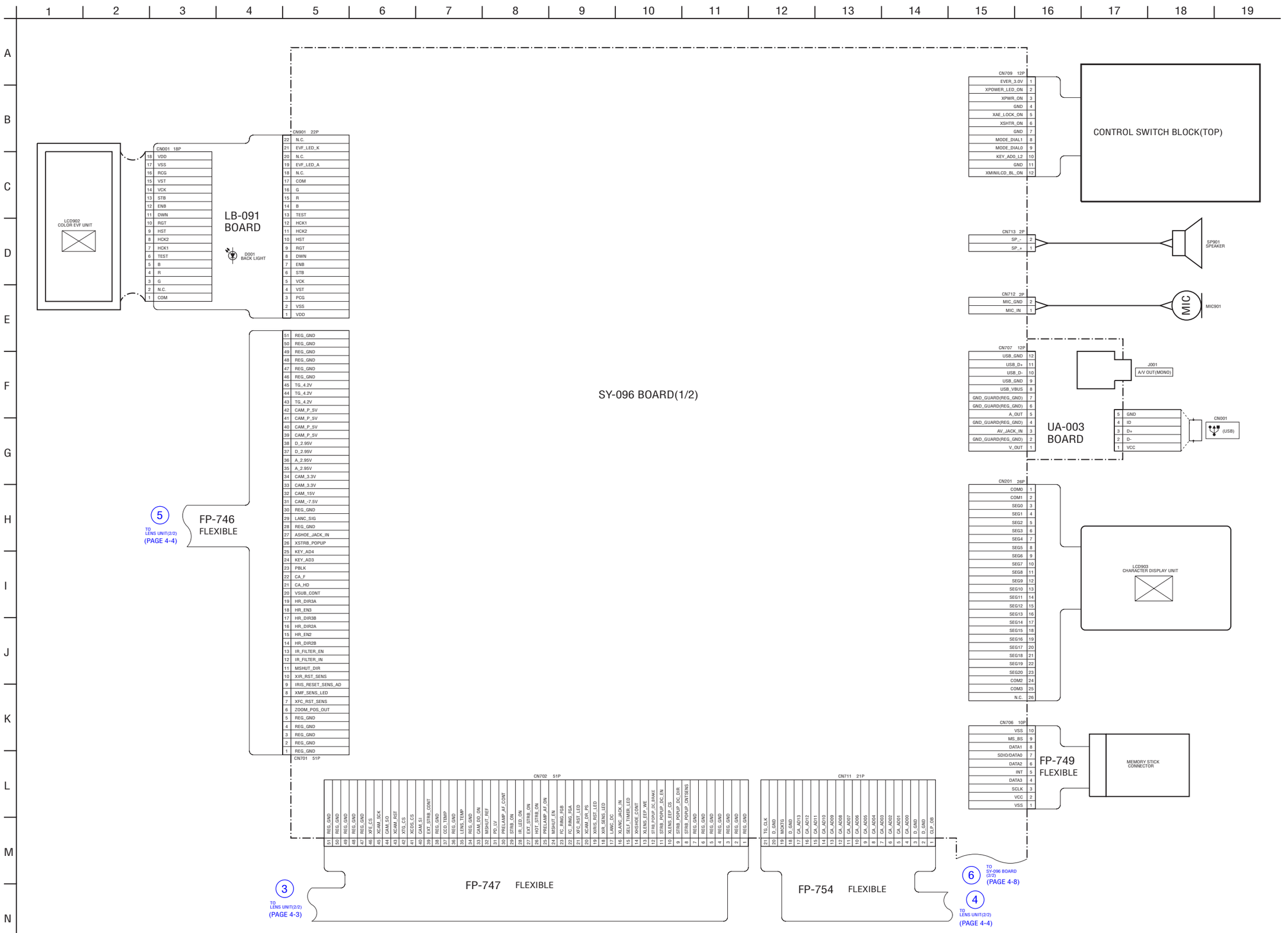
4-1. FRAME SCHEMATIC DIAGRAM (1/4)



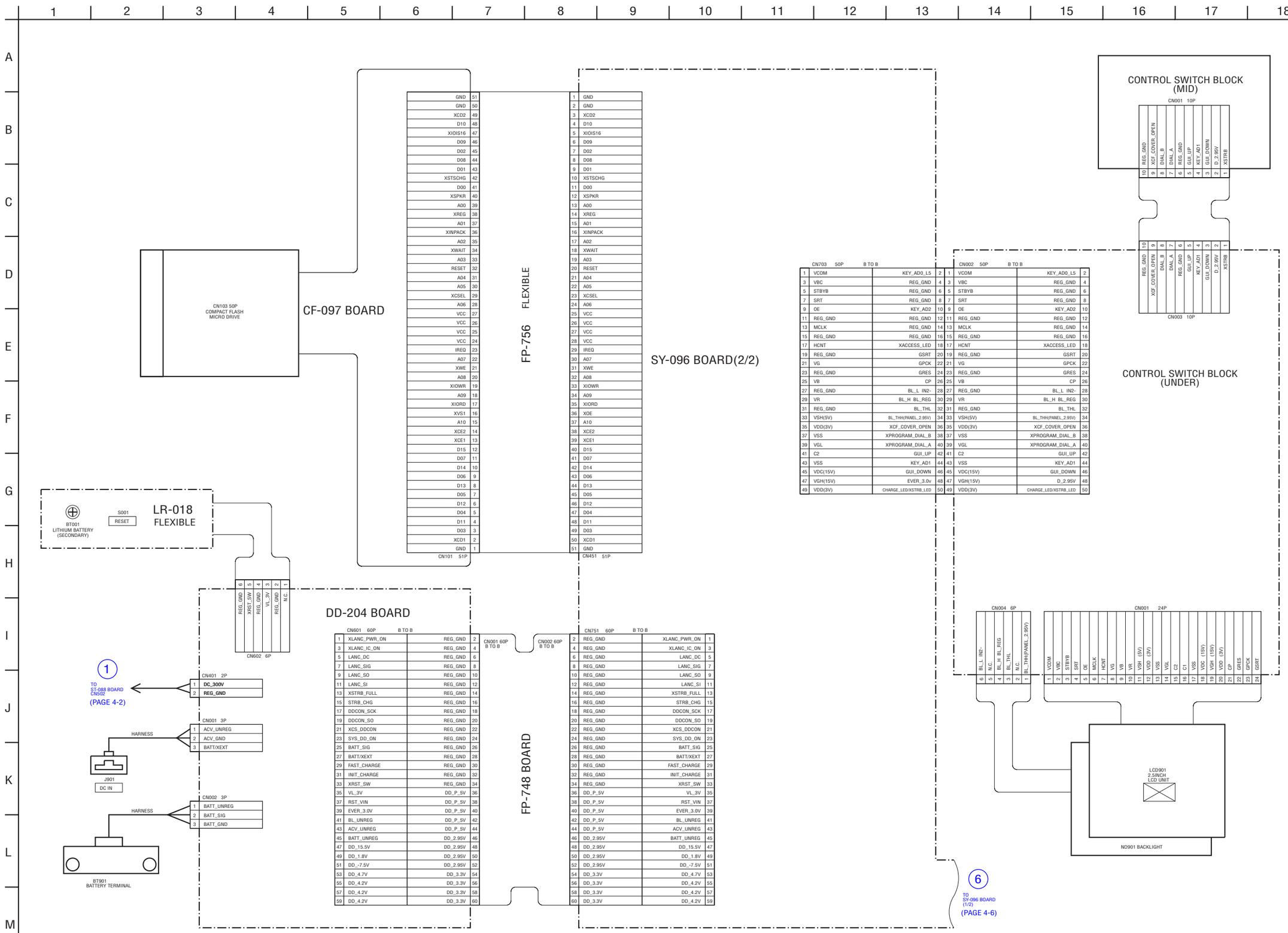
FRAME SCHEMATIC DIAGRAM (2/4)



FRAME SCHEMATIC DIAGRAM (3/4)



FRAME SCHEMATIC DIAGRAM (4/4)



16

4-2. SCHEMATIC DIAGRAMS

Link

- DD-204 BOARD (DC/DC CONVERTER)
- LB-091 BOARD (EVF, EVF BACK LIGHT)
- LR-018 BOARD (BATTERY, RESET SW)
- CF-097 BOARD (CF CARD CONNECTOR)
- ST-088 BOARD (FLASH CONTROL)
- FP-756 FLEXIBLE BOARD
- LS-067 BOARD (AF LASER)
- SW-410 BOARD (FUNCTION KEY)
- MT-067 BOARD (FLASH MOTOR)
- AJ-007 BOARD (JACK)
- SI-037 BOARD (FLASH, IR LED)
- CONTROL SWITCH BLOCK (TOP)
- AS-050 FLEXIBLE BOARD
- CONTROL SWITCH BLOCK (MID)
- UA-003 BOARD (AV, USB JACK)
- CONTROL SWITCH BLOCK (UNDER)

- COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μμF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example

C541	L452
22U	10UH
TA A	2520

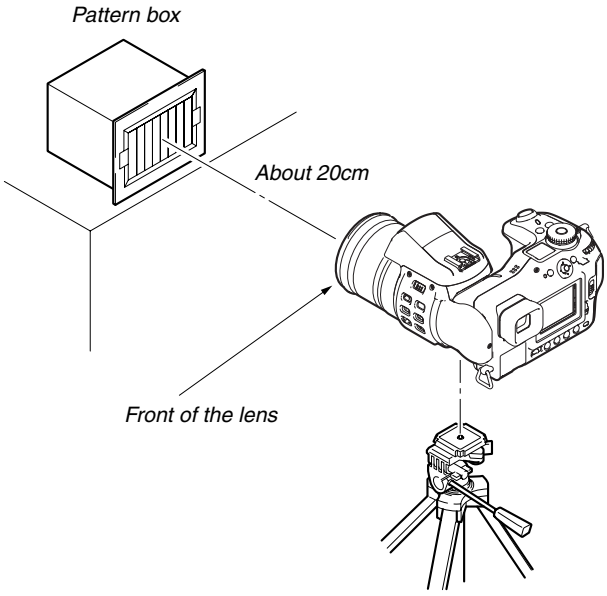
Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with * differ according to the model/destination.
  Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO/SERVO SIGNAL (ANALOG)
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

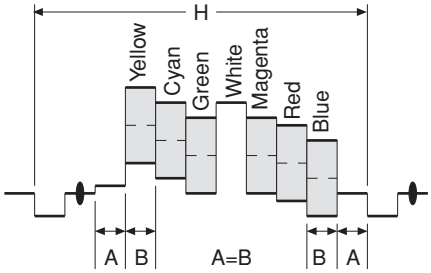


Fig. a (Video output terminal output waveform)

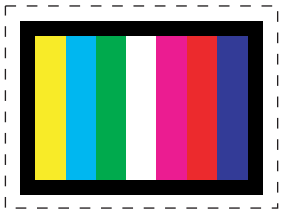


Fig.b (Picture on monitor TV)

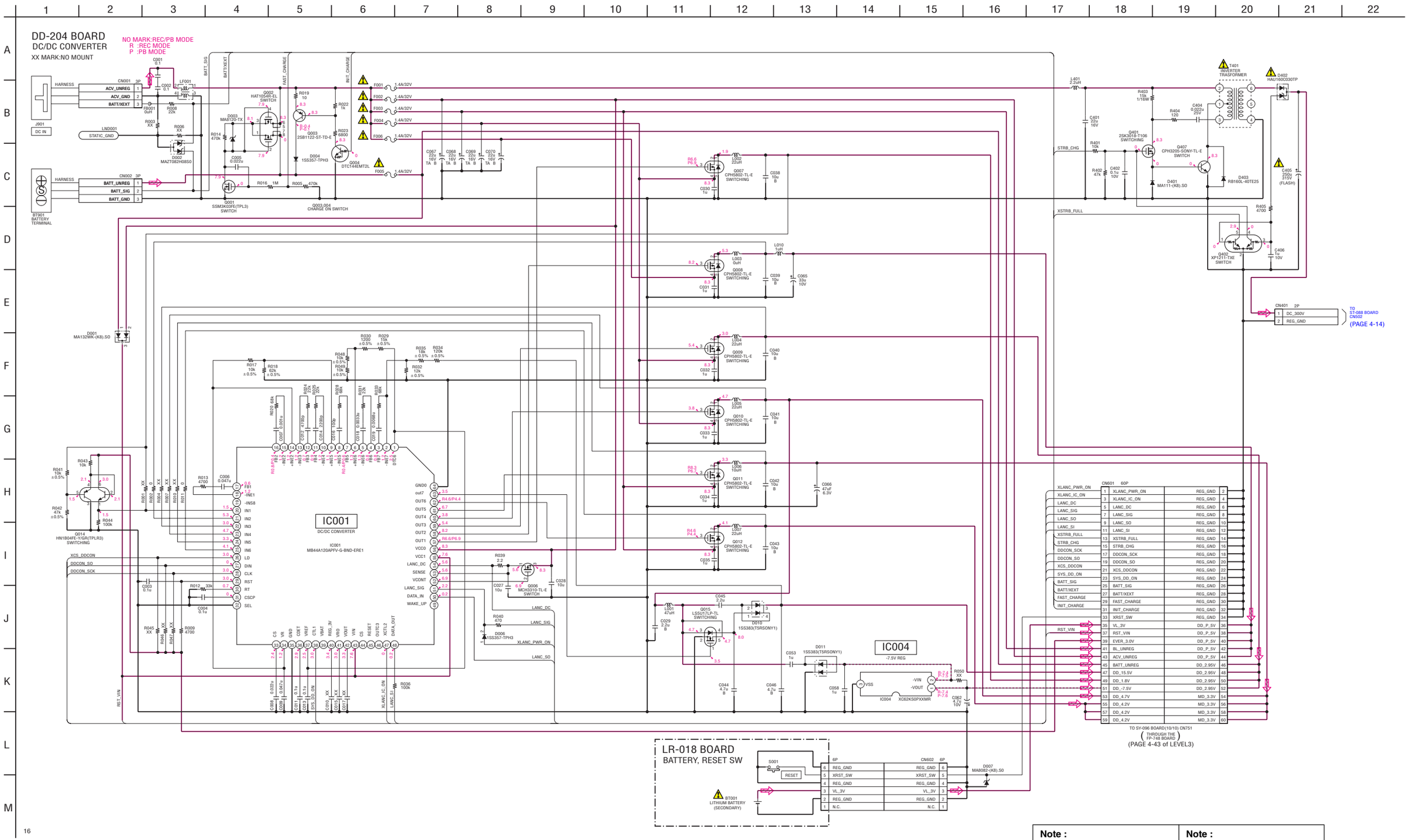
When indicating parts by reference number, please include the board name.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-2. SCHEMATIC DIAGRAMS

For Schematic Diagram

• Refer to page 4-49 for printed wiring board.

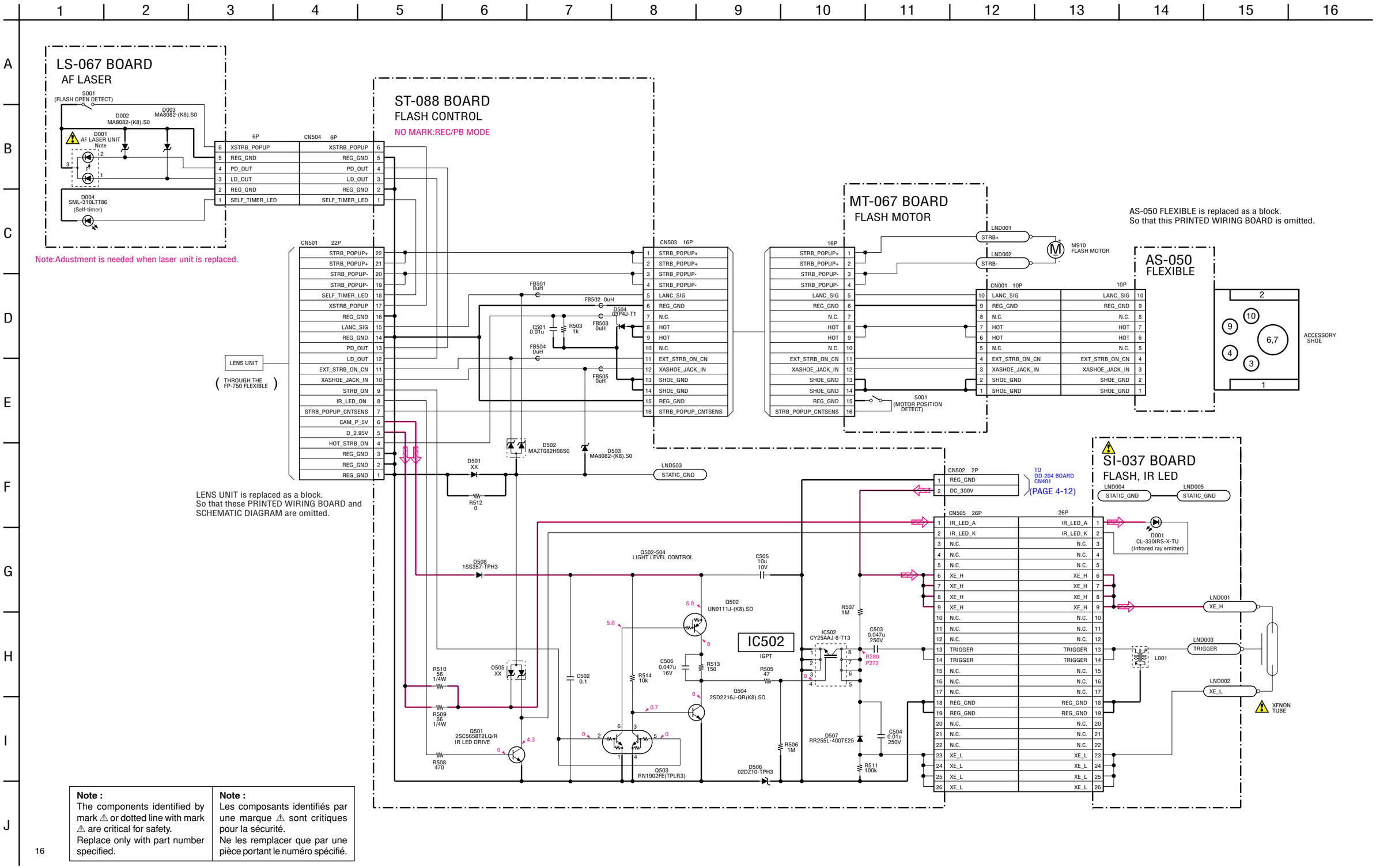


Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

For Schematic Diagram

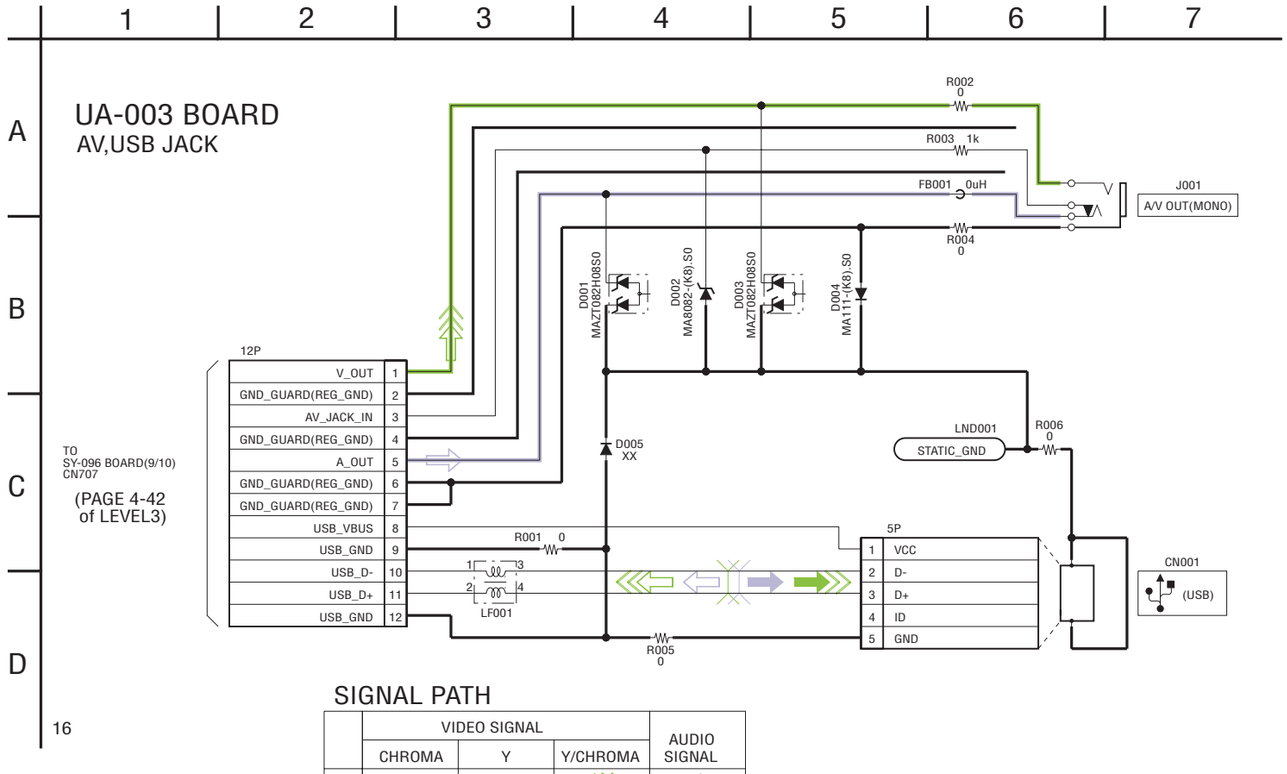
• Refer to page 4-51 for printed wiring board of ST-088 and MT-067.
• Refer to page 4-52 for printed wiring board of LS-067.
• Refer to page 4-53 for printed wiring board of SI-037.



Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

For Schematic Diagram

• Refer to page 4-54 for printed wiring board.



4-2. SCHEMATIC DIAGRAMS | CF-097 PRINTED WIRING BOARD

For Schematic Diagram

• Refer to page 4-55 for printed wiring board.

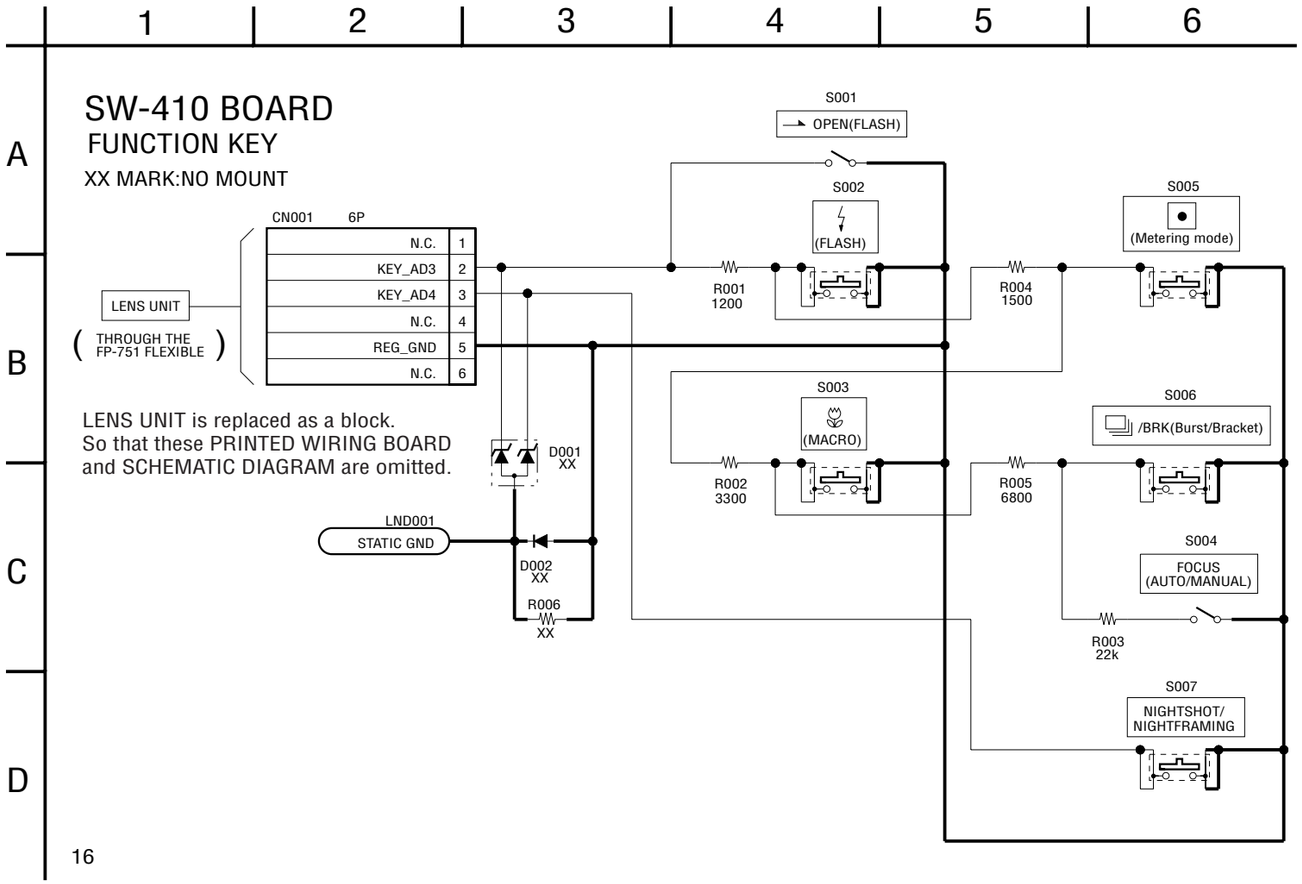
FP-756 FLEXIBLE is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

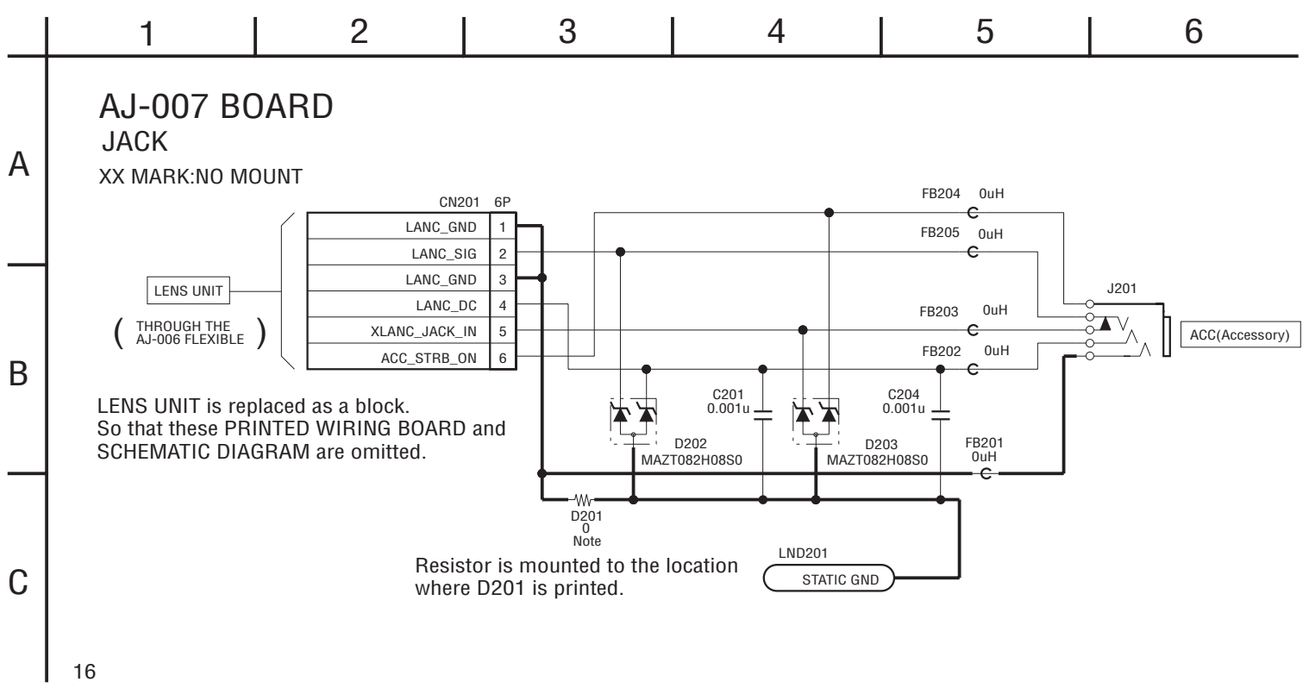
SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			⇒	⇒
PB			⇨	⇨

For Schematic Diagram

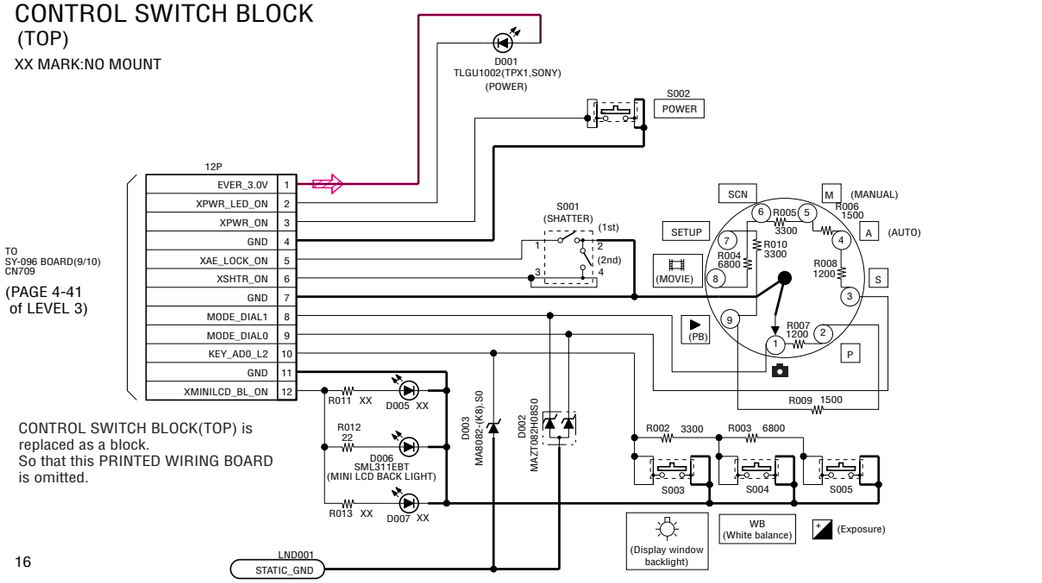
• Refer to page 4-57 for printed wiring board of SW-410.
• Refer to page 4-56 for printed wiring board of AJ-007.





CONTROL SWITCH BLOCK (TOP)

XX MARK:NO MOUNT

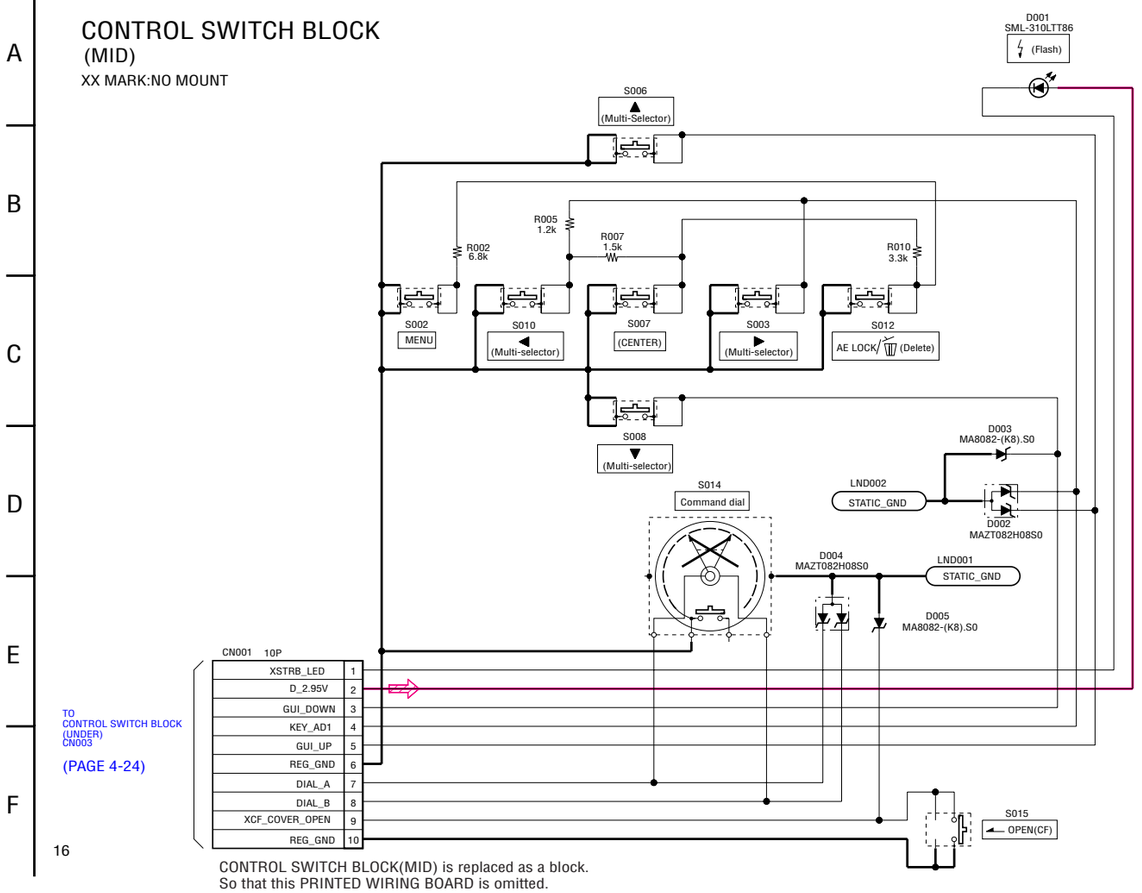


CONTROL SWITCH BLOCK(TOP) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

16

CONTROL SWITCH BLOCK (MID)

XX MARK:NO MOUNT



CONTROL SWITCH BLOCK(MID) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

16

CONTROL SWITCH BLOCK
(UNDER)

XX MARK:NO MOUNT

TO SY-096 BOARD(9/10) CN703
(PAGE 4-41 of LEVEL3)

CN002 50P B TO B

1	VCOM	KEY_AD0_L5	2
3	VBC	REG_GND	4
5	STBYB	REG_GND	6
7	SRT	REG_GND	8
9	OE	KEY_AD2	10
11	REG_GND	REG_GND	12
13	MCLK	REG_GND	14
15	REG_GND	REG_GND	16
17	HCNT	XACCESS_LED	18
19	REG_GND	GSRT	20
21	VG	GPCK	22
23	REG_GND	GRES	24
25	VB	CP	26
27	REG_GND	BL_L IN2-	28
29	VR	BL_H BL_REG	30
31	REG_GND	BL_THL	32
33	VSH(5V)	BL_THH(PANEL_2.95V)	34
35	VDD(3V)	XCF_COVER_OPEN	36
37	VSS	XPROGRAM_DIAL_B	38
39	VGL	XPROGRAM_DIAL_A	40
41	C2	GUI_UP	42
43	VSS	KEY_AD1	44
45	VDC(15V)	GUI_DOWN	46
47	VGH(15V)	D_2.95V	48
49	VDD(3V)	CHARGE_LED/XSTRB_LED	50

CN001 24P

LCD901
2.5INCH
LCD UNIT

VCOM	1	
VBC	2	
STBYB	3	
SRT	4	
OE	5	
MCLK	6	
HCNT	7	
VG	8	
VB	9	
VR	10	
VSH (5V)	11	
VDD (3V)	12	
VSS	13	
VGL	14	
C2	15	
C1	16	
VSS	17	
VDC (15V)	18	
VGH (15V)	19	
VDD (3V)	20	
CP	21	
GRES	22	
GPCK	23	
GSRT	24	

S006
CF("Memory Stick"/CF card)

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

CN004 6P

6	BL_L IN2-
5	N.C.
4	BL_H BL_REG
3	BL_THL
2	N.C.
1	BL_THH(PANEL_2.95V)

⚠ ND901
BACKLIGHT

CN003 10P

10	REG_GND
9	XCF_COVER_OPEN
8	DIAL_B
7	DIAL_A
6	REG_GND
5	GUI_UP
4	KEY_AD1
3	GUI_DOWN
2	D_2.95V
1	XSTRB

TO
CONTROL SWITCH
BLOCK
(MID)
CN001
(PAGE 4-22)

R001 22k
R002 6.8k
R003 3.3k
R004 1.5k
R005 1.2k

S001 FINDER/LCD
S002 (Screen status)
S003 (Self Timer/Index)
S004 (Digital zoom Playback zoom)
S005 (Quick Review)

D001
SML-310LTT86
ACCESS

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

CONTROL SWITCH BLOCK(UNDER) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

Schematic diagrams of the SY-096 board are not shown.
Pages from 4-25 to 4-44 are not shown.

4-3. PRINTED WIRING BOARDS

Link

- DD-204 BOARD
- LB-091 BOARD
- LR-018 BOARD
- UA-003 BOARD
- ST-088 BOARD
- CF-097 BOARD
- MT-067 BOARD
- AJ-007 BOARD
- LS-067 BOARD
- SW-410 BOARD
- SI-037 BOARD
- FP-748 BOARD

- COMMON NOTE FOR PRINTED WIRING BOARDS
- MOUNTED PARTS LOCATION
- CIRCUIT BOARDS LOCATION
- CIRCUIT BOARDS AND FLEXIBLE BOARDS LOCATION

Board Name	*Function*
DD-204	*DC/DC CONVERTER*
LR-018	*BATTERY, RESET SW*
ST-088	*FLASH CONTROL*
MT-067	*FLASH MOTOR*
LS-067	*AF LASER*
SI-037	*FLASH, IR LED*
LB-091	*EVF, EVF BACK LIGHT*
UA-003	*AV, USB JACK*
CF-097	*CF CARD CONNECTOR*
AJ-007	*JACK*
SW-410	*FUNCTION KEY*
FP-748	*CONNECTOR*

4-3. PRINTED WIRING BOARDS

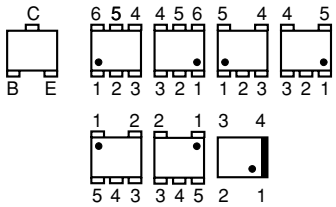
THIS NOTE IS COMMON FOR WIRING BOARDS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

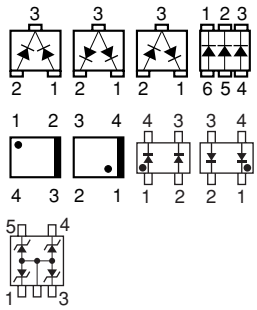
- : Uses unleaded solder.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.

Transistor



Diode



BOARD INFORMATION

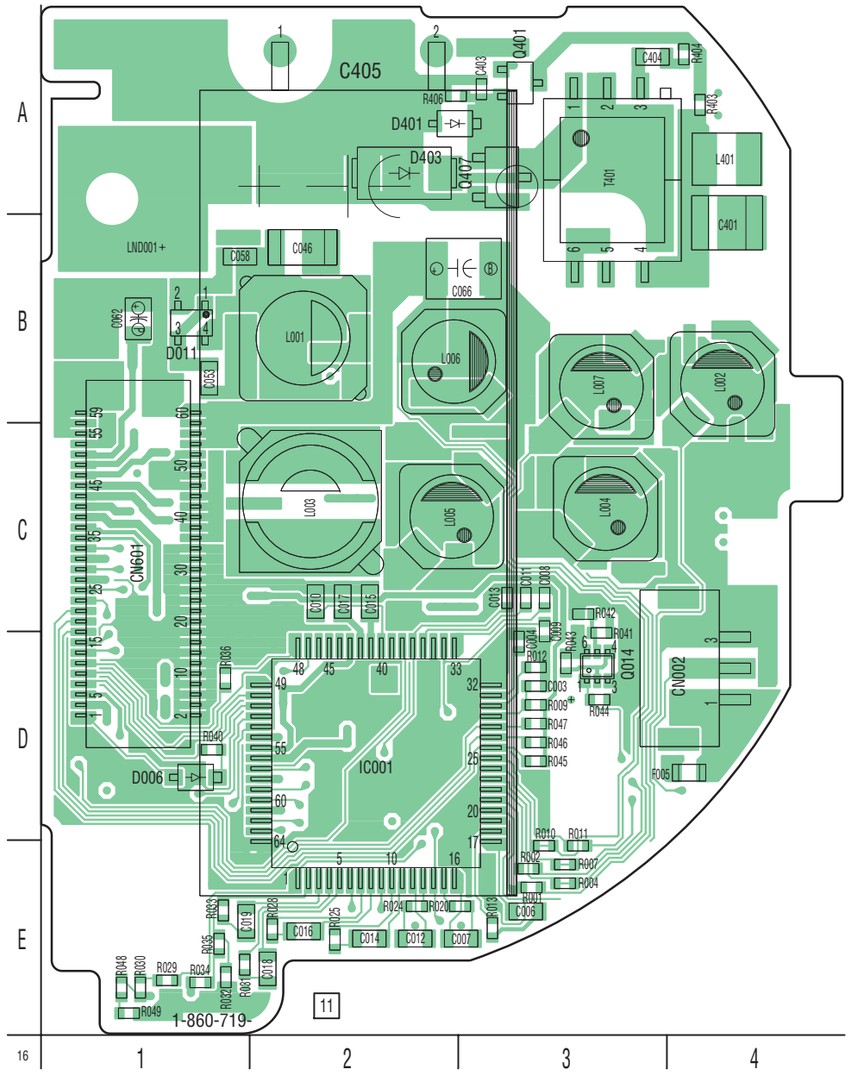
board name	parts location (shown on page)	pattern		CSP IC
		number of layers	layers not shown	
DD-204	4-63	6	2 to 5	–
LR-018	–	1	–	–
ST-088	4-63	6	2 to 5	–
MT-067	–	1	–	–
LS-067	–	1	–	–
SI-037	–	1	–	–
LB-091	–	1	–	–
UA-003	4-63	1	–	–
CF-097	4-63	2	–	–
AJ-007	4-63	2	–	–
SW-410	4-63	2	–	–
FP-748	–	1	–	–
SY-096	4-65	8	2 to 7	IC301, 302, 401, 452, 501, 601

4-3. PRINTED WIRING BOARDS

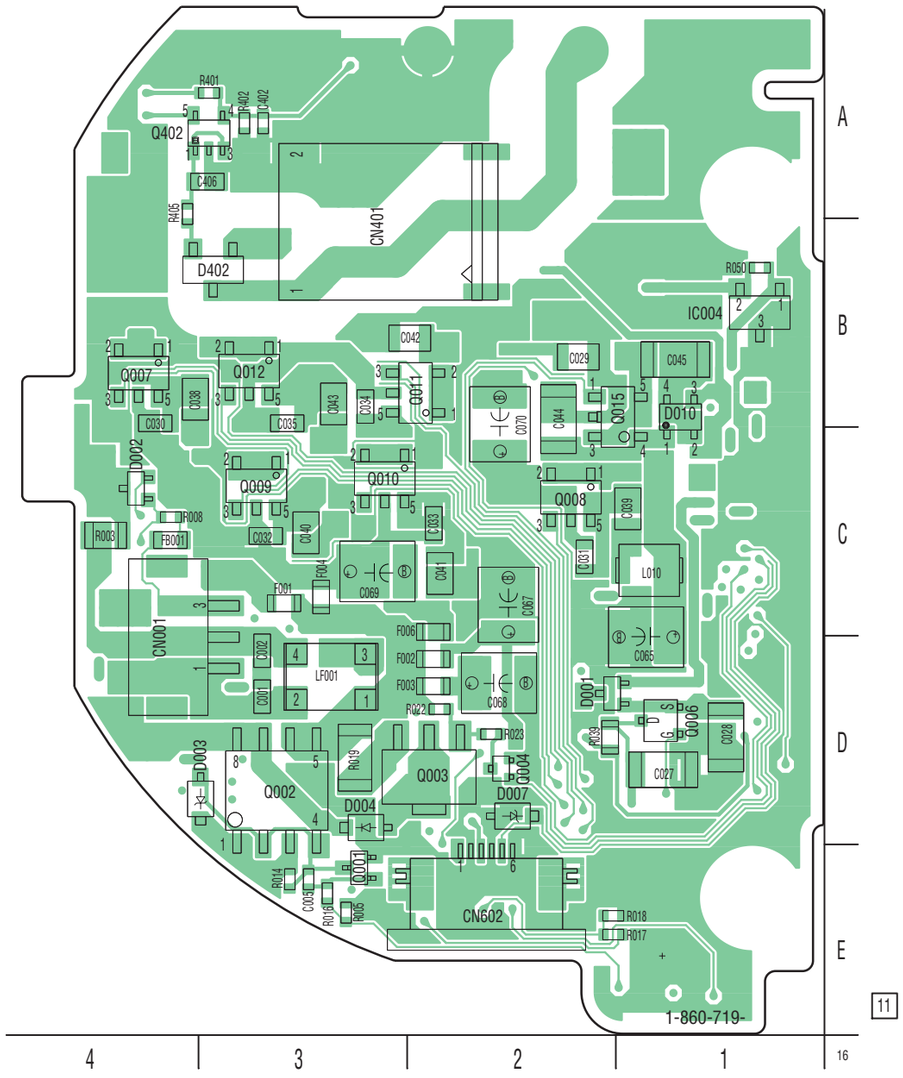
• Refer to page 4-47 for common note for printed wiring board.

• : Uses unleaded solder.

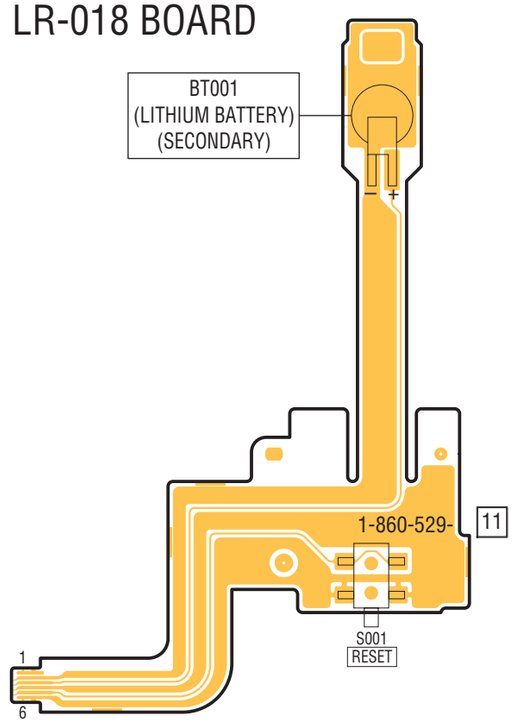
DD-204 BOARD(SIDE A)



DD-204 BOARD(SIDE B)



LR-018 BOARD

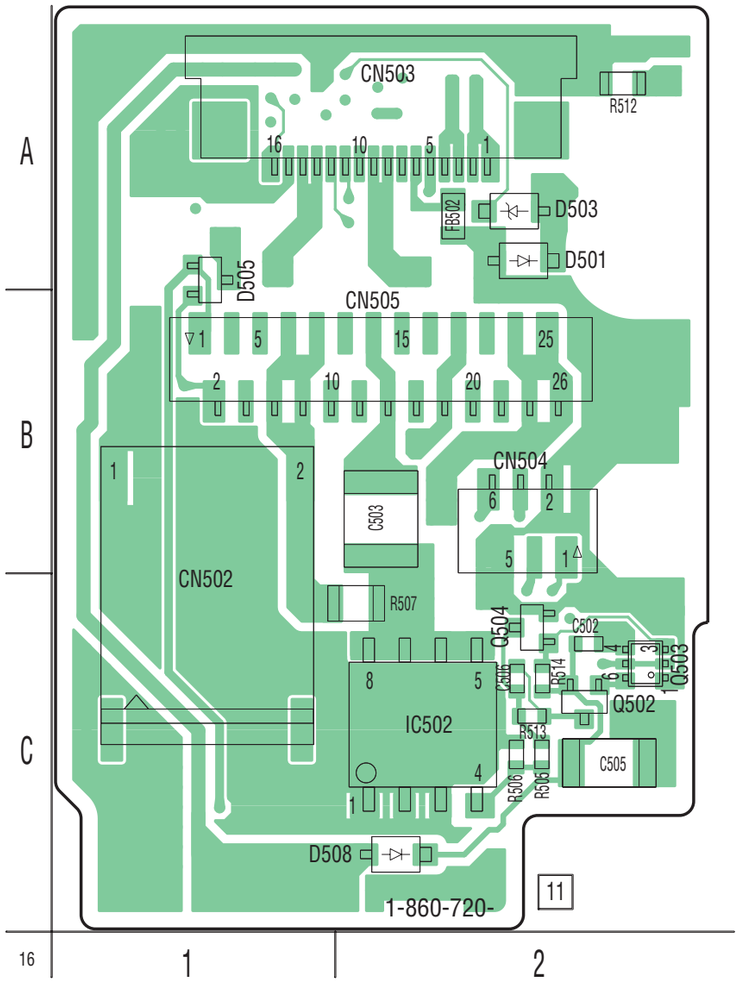


CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

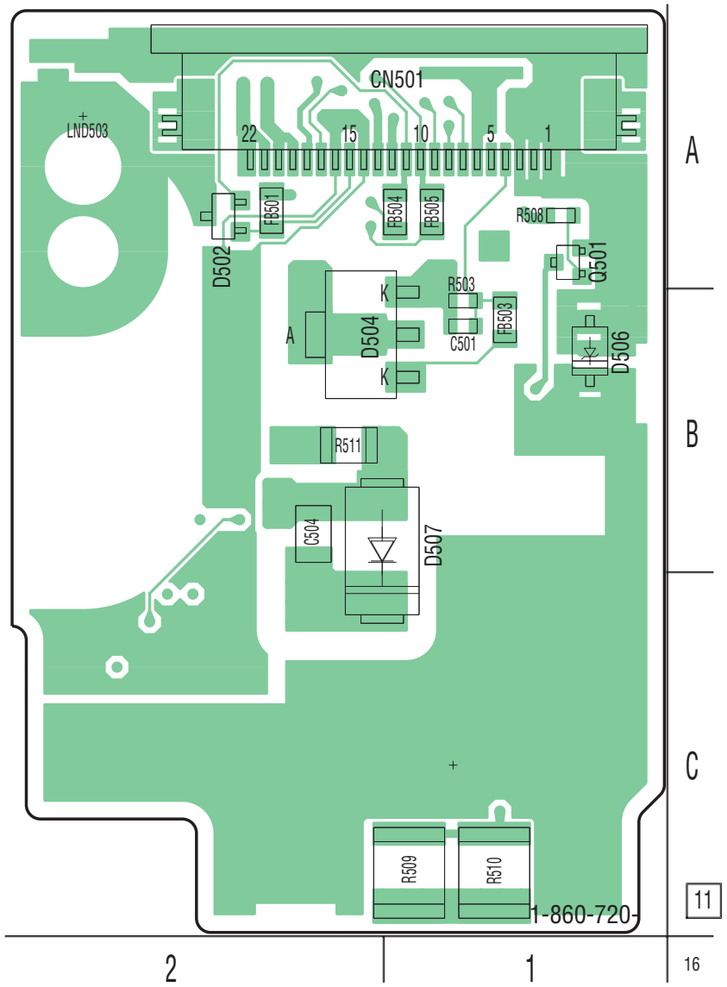
• Refer to page 4-47 for common note for printed wiring board.

• : Uses unleaded solder.

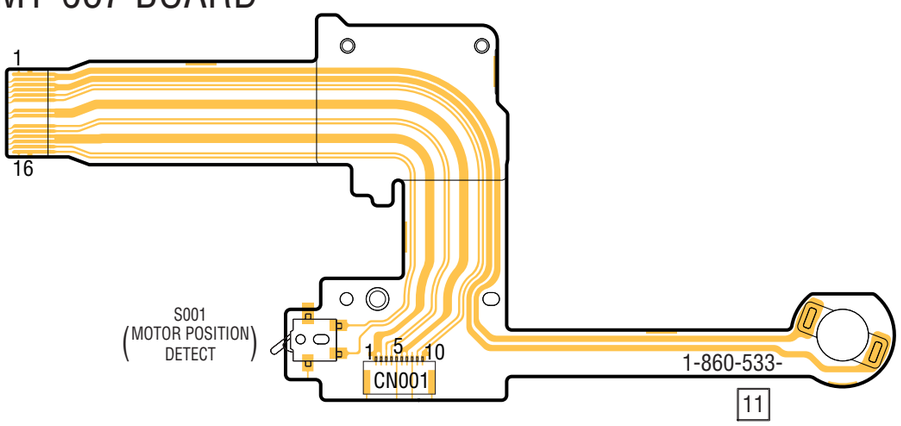
ST-088 BOARD(SIDE A)



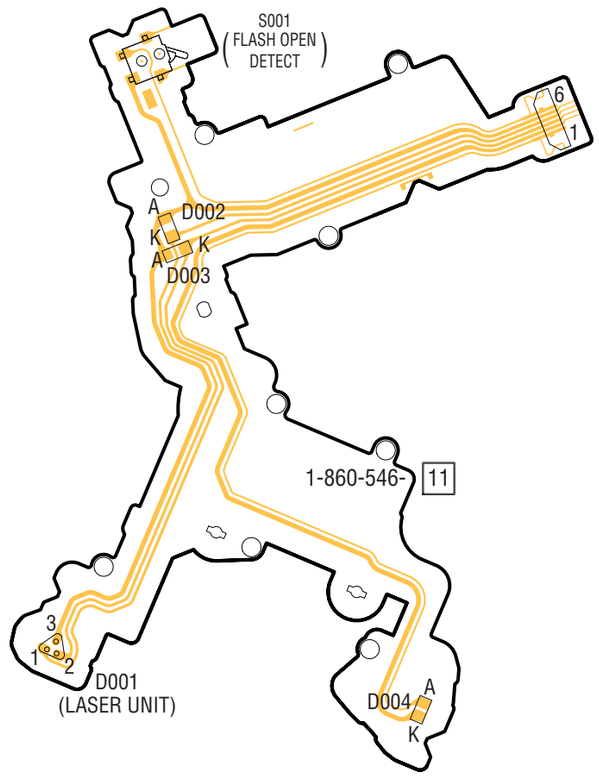
ST-088 BOARD(SIDE B)



MT-067 BOARD



LS-067 BOARD

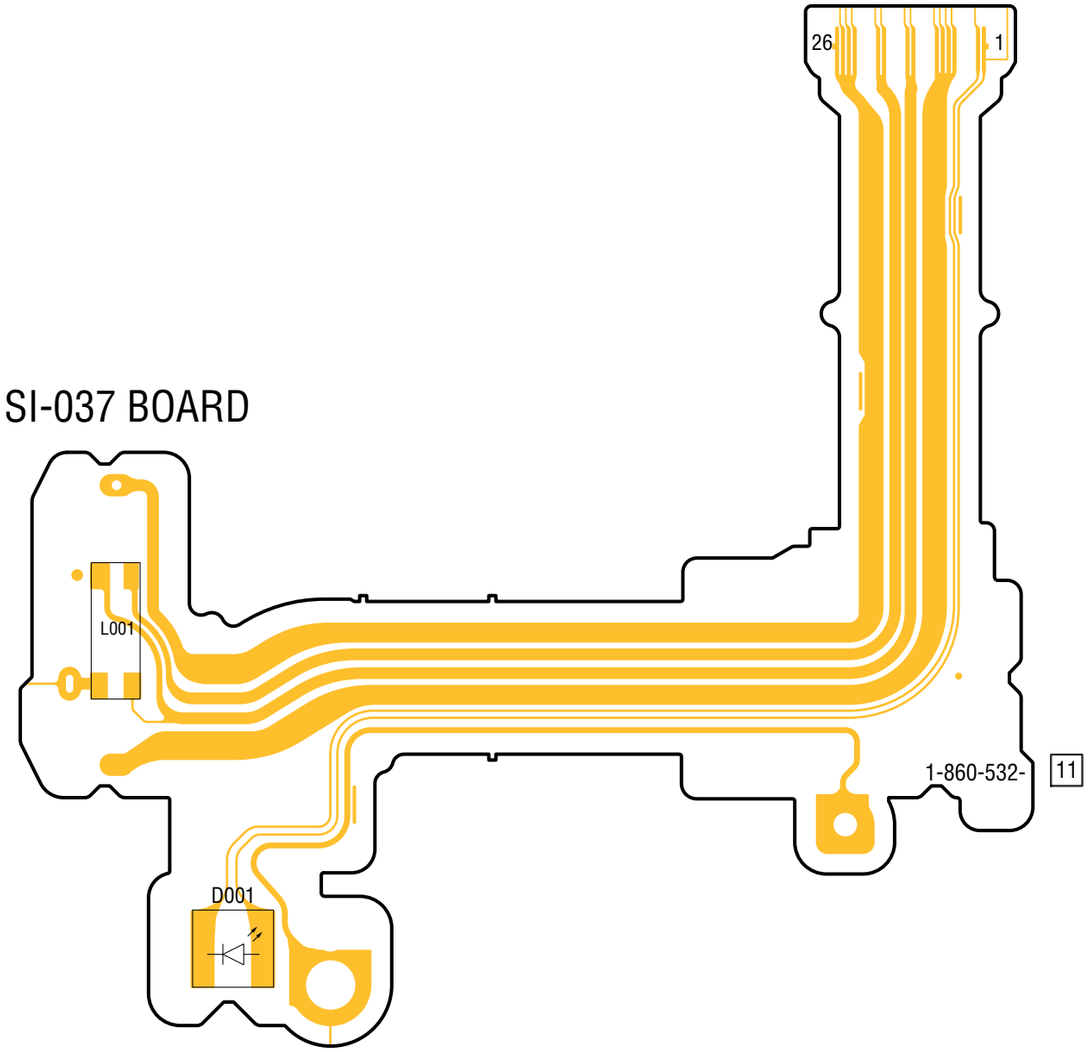


Adjustment is needed when laser unit is replaced.

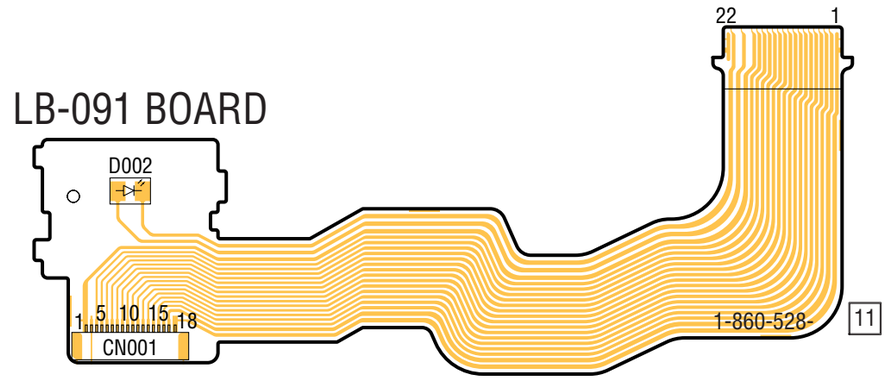
• Refer to page 4-47 for common note for printed wiring board.

• : Uses unleaded solder.

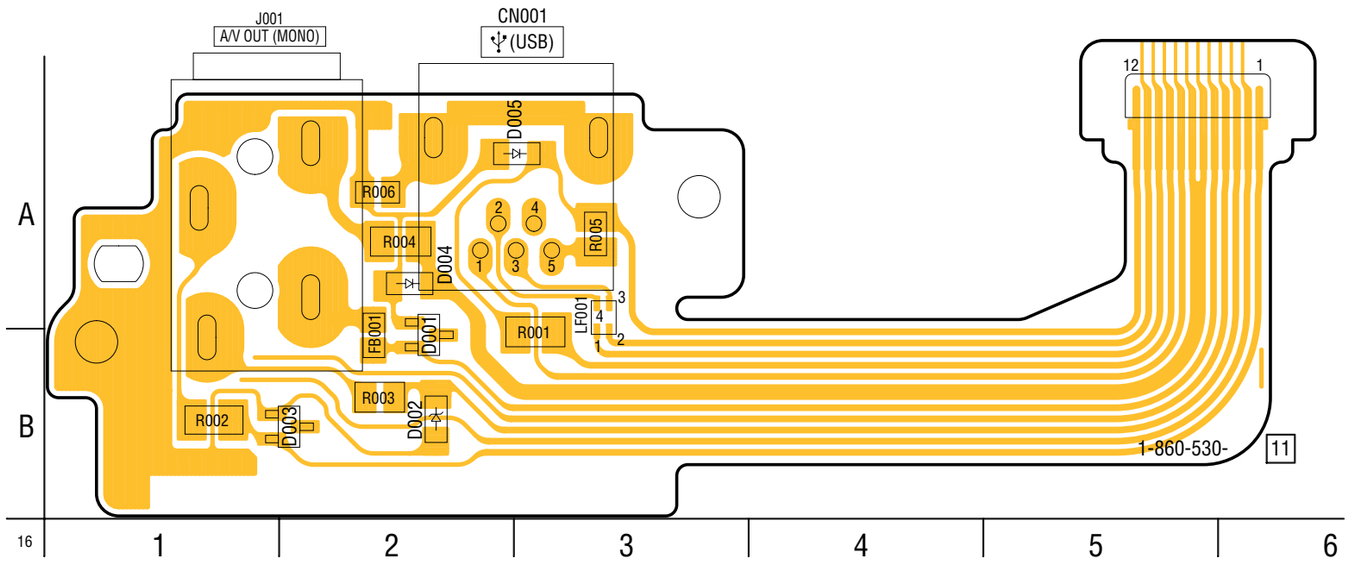
SI-037 BOARD



LB-091 BOARD



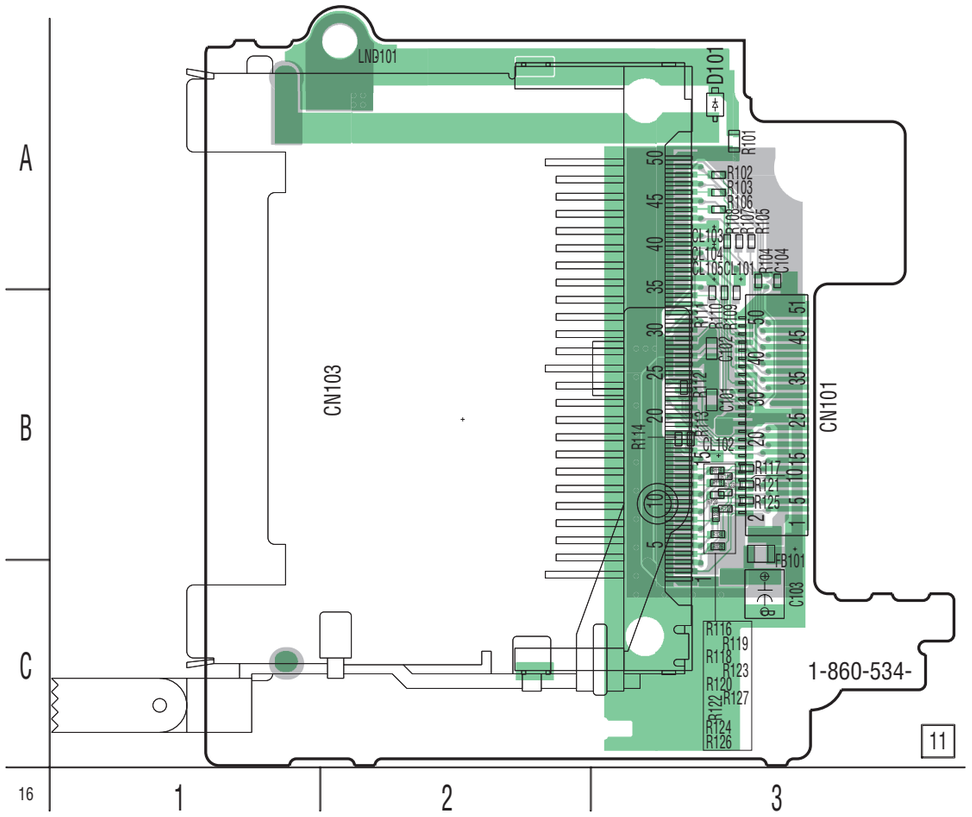
UA-003 BOARD



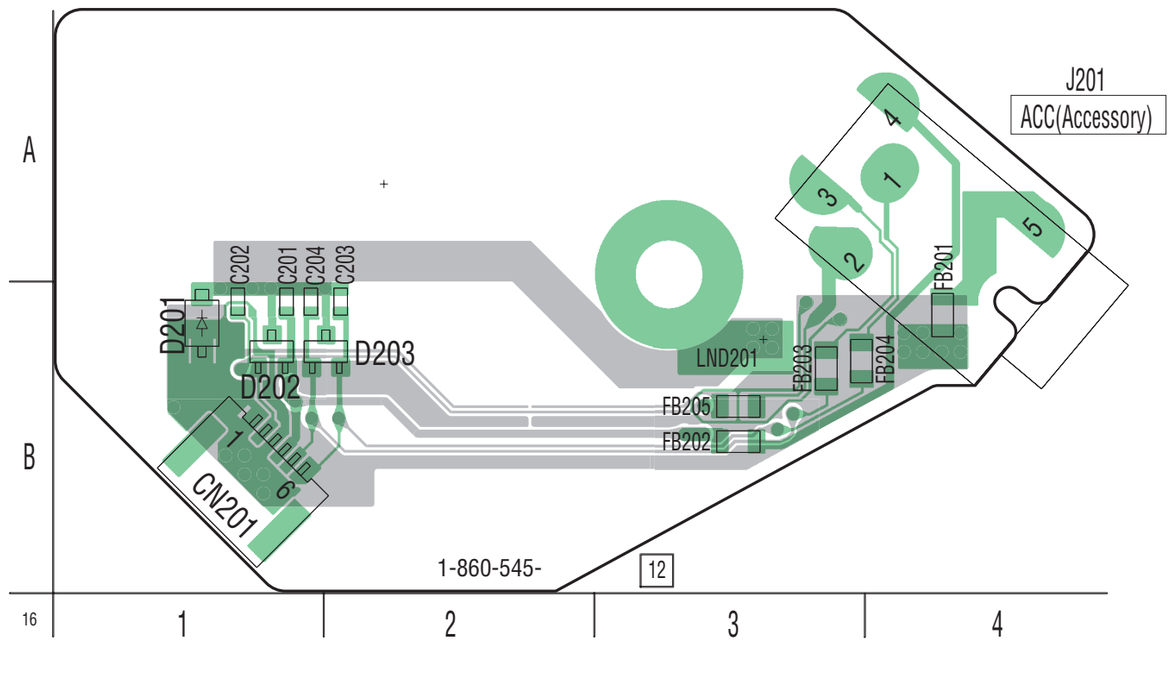
• Refer to page 4-47 for common note for printed wiring board.

• : Uses unleaded solder.

CF-097 BOARD



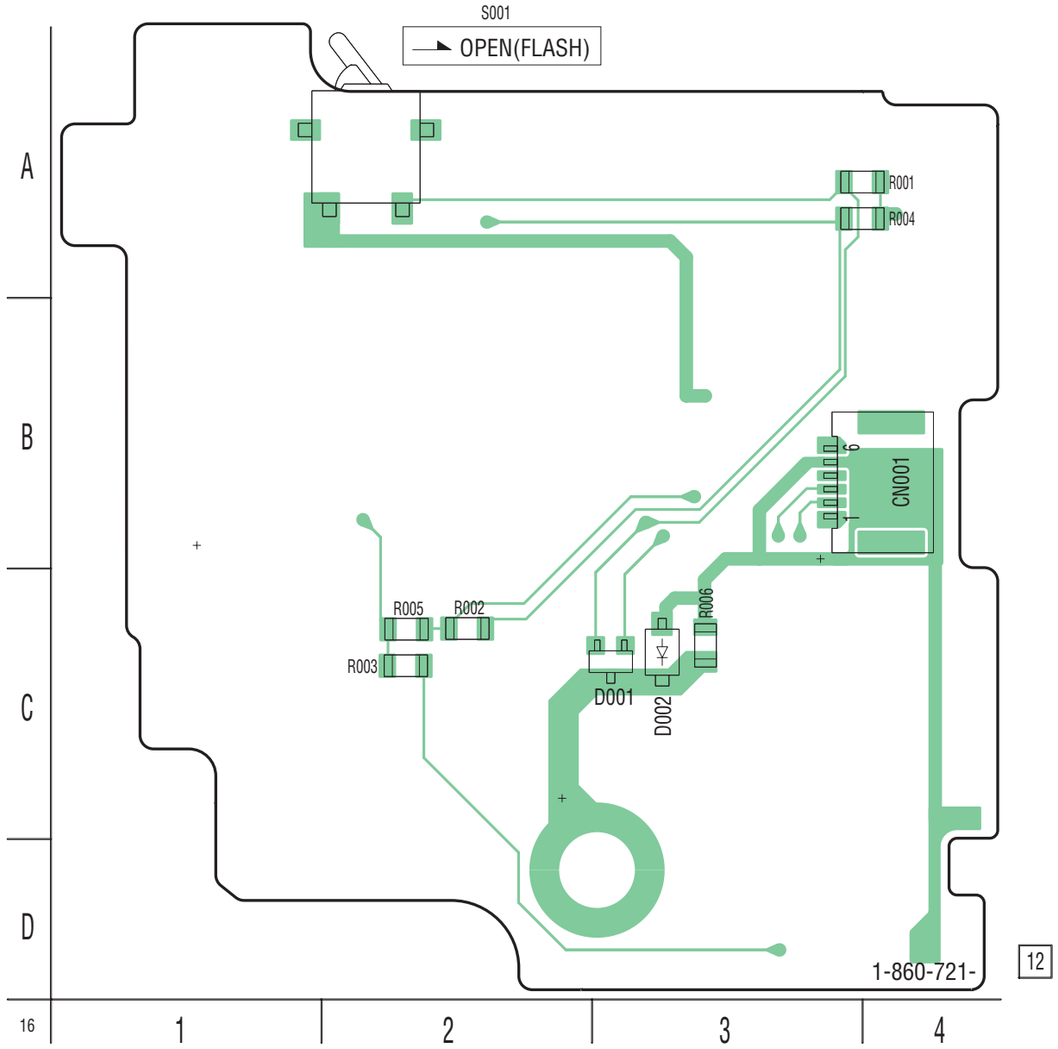
AJ-007 BOARD



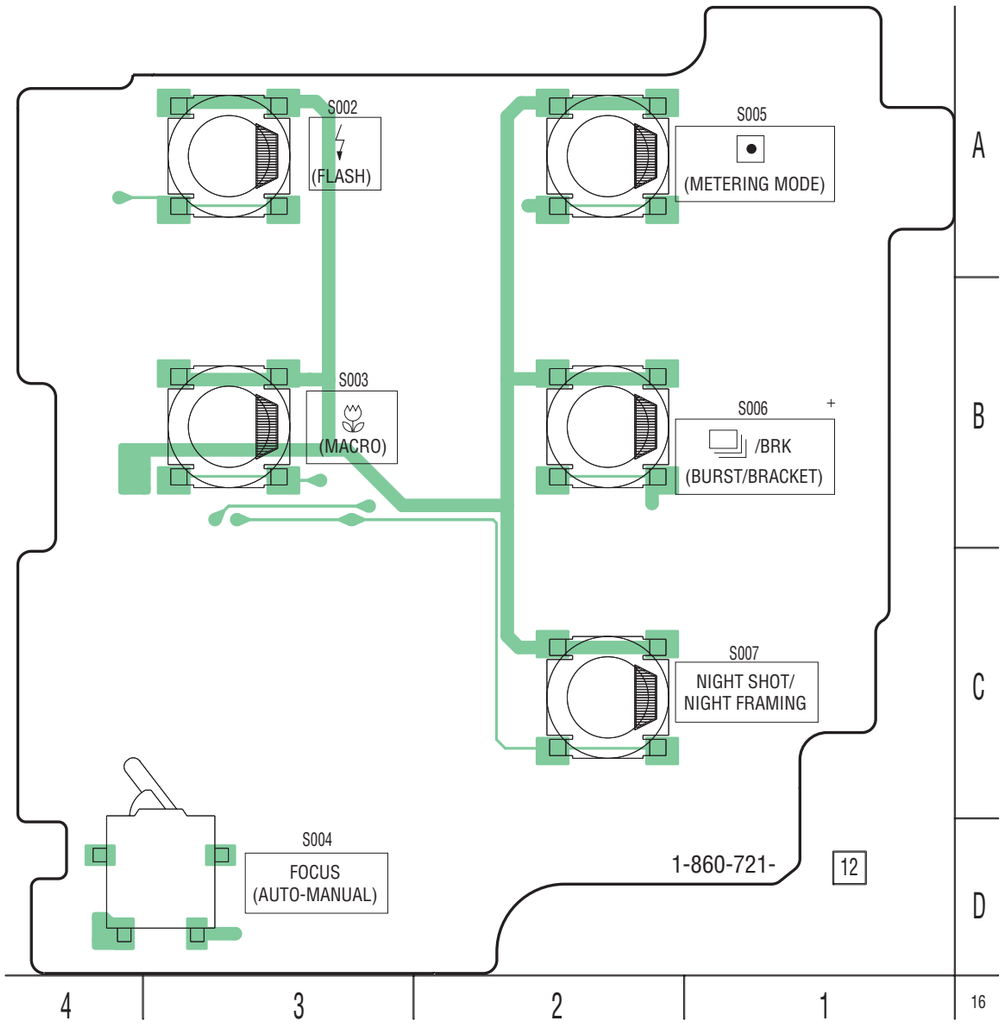
• Refer to page 4-47 for common note for printed wiring board.

• : Uses unleaded solder.

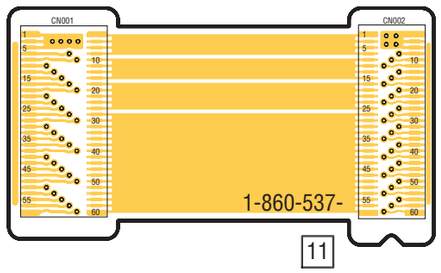
SW-410 BOARD(SIDE A)



SW-410 BOARD(SIDE B)



FP-748 BOARD



Printed wiring board of the SY-096 board is not shown.
Pages from 4-59 to 4-62 are not shown.

4-3. PRINTED WIRING BOARDS

4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

DD-204 BOARD

* C001	D-3	L001	B-2	* Q001	E-3	R001	E-3
* C002	D-3	L002	B-4	* Q002	D-3	R002	E-3
C003	D-3	L003	C-2	* Q003	D-2	* R003	C-4
C004	D-3	L004	C-3	* Q004	D-2	R004	E-3
* C005	E-3	L005	C-2	* Q006	D-1	* R005	E-3
C006	E-3	L006	B-2	* Q007	B-4	R007	E-3
C007	E-2	L007	B-3	* Q008	C-2	* R008	C-4
C008	C-3	* L010	C-1	* Q009	C-3	R009	D-3
C009	C-3	L401	A-4	* Q010	C-3	R010	E-3
C010	C-2			* Q011	B-2	R011	E-3
C011	C-3	* LF001	D-3	* Q012	B-3	R012	D-3
C012	E-2			Q014	D-3	R013	E-3
C013	C-3			* Q015	B-1	* R014	E-3
C014	E-2			Q401	A-3	* R016	E-3
C015	C-2			* Q402	A-3	* R017	E-1
C016	E-2			Q407	A-3	* R018	E-1
C017	C-2					* R019	D-3
C018	E-2					R020	E-2
C019	E-1					* R022	D-2
* C027	D-1					* R023	D-2
* C028	D-1					R024	E-2
* C029	B-2					R025	E-2
* C030	B-4					R028	E-2
* C031	C-2					R029	E-1
* C032	C-3					R030	E-1
* C033	C-2					R031	E-1
* C034	B-3					R032	E-1
* C035	B-3					R033	E-1
* C038	B-4					R034	E-1
* C039	C-1					R035	E-1
* C040	C-3					R036	D-1
* C041	C-2					* R039	D-2
* C042	B-2					R040	D-1
* C043	B-3					R041	C-3
* C044	B-2					R042	C-3
* C045	B-1					R043	D-3
C046	B-2					R044	D-3
C053	B-1					R045	D-3
C058	B-1					R046	D-3
C062	B-1					R047	D-3
* C065	C-1					R048	E-1
C066	B-2					R049	E-1
* C067	C-2					* R050	B-1
* C068	D-2					* R401	A-3
* C069	C-3					* R402	A-3
* C070	B-2					R403	A-4
C401	B-4					R404	A-4
* C402	A-3					* R405	A-4
C403	A-3					R406	A-2
C404	A-3						
C405	A-2					T401	A-3
* C406	A-3						
* CN001	C-4						
CN002	D-4						
* CN401	A-3						
CN601	C-1						
* CN602	E-2						
* D001	D-2						
* D002	C-4						
* D003	D-3						
* D004	D-3						
D006	D-1						
* D007	D-2						
* D010	B-1						
D011	B-1						
D401	A-2						
* D402	B-3						
D403	A-2						
* F001	C-3						
* F002	D-2						
* F003	D-2						
* F004	C-3						
F005	D-4						
* F006	C-2						
* FB001	C-4						
IC001	D-2						
* IC004	B-1						

ST-088 BOARD

* C501	B-1	* CN501	A-1	D501	A-2	* FB501	A-2
C502	C-2	CN502	C-1	* D502	A-2	FB502	A-2
C503	B-2	CN503	A-2	D503	A-2	* FB503	B-1
* C504	B-2	CN504	B-2	* D504	B-2	* FB504	A-1
C505	C-2	CN505	B-2	D505	A-1	* FB505	A-1
C506	C-2			* D506	B-1		
				* D507	B-1	IC502	C-2
				D508	C-2		
						* Q501	A-1
						Q502	C-2
						Q503	C-2
						Q504	C-2
						* R503	B-1
						R505	C-2
						R506	C-2
						R507	C-2
						* R508	A-1
						* R509	C-1
						* R510	C-1
						* R511	B-2
						R512	A-2
						R513	C-2
						R514	C-2

CF-097 BOARD

C101	B-3	CN101	B-3	D101	A-3	R101	A-3
C102	B-3	CN103	B-2	FB101	B-3	R102	A-3
C103	C-3					R103	A-3
C104	A-3					R104	A-3
						* R105	A-3
						R106	A-3
						* R107	A-3
						* R108	A-3
						* R109	B-3
						* R110	B-3
						* R111	B-3
						* R112	B-3
						* R113	B-3
						* R114	B-3
						R116	B-3
						* R117	B-3
						R118	B-3
						* R119	B-3
						R120	B-3
						* R121	B-3
						R122	B-3
						* R123	B-3
						R124	B-3
						* R125	B-3
						R126	B-3
						* R127	B-3

AJ-007 BOARD

C201	B-1	CN201	B-1
C202	B-1		
C203	B-1	D201	B-1
C204	B-1	D202	B-1
		D203	B-1
		FB201	B-4
		FB202	B-3
		FB203	B-3
		FB204	B-3
		FB205	B-3
		J201	A-4

SW-410 BOARD

CN001	B-4	R001	A-4
		R002	C-2
D001	C-3	R003	C-2
D002	C-3	R004	A-4
		R005	C-2
		R006	C-3
		S001	A-2
		* S002	A-3
		* S003	B-3
		* S004	D-3
		* S005	A-2
		* S006	B-2
		* S007	C-2

UA-003 BOARD

CN001	A-2	R001	B-3
		R002	B-1
D001	B-2	R003	B-2
D002	B-2	R004	A-2
D003	B-2	R005	A-3
D004	A-2	R006	A-2
D005	A-2		
FB001	B-2		
J001	A-1		
LF001	A-3		

Mounted parts location of the SY-096 board are not shown.
Pages from 4-65 to 4-66 are not shown.

NOTE

5. REPAIR PARTS LIST

NOTE: Characters A to Z of the electrical parts list indicate location of exploded views in which the desired part is shown.

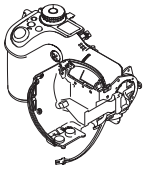
Link EXPLODED VIEWS

A

OVERALL SECTION

B

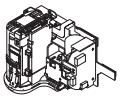
STROBOSCOPE BLOCK ASSEMBLY



C

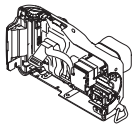
CABINET (FRONT) BLOCK ASSEMBLY-1

CABINET (FRONT) BLOCK ASSEMBLY-2

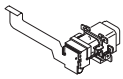


D

BTH BLOCK ASSEMBLY



CABINET (REAR) BLOCK ASSEMBLY



EVF ASSEMBLY

Link ELECTRICAL PARTS LIST

ACCESSORIES

AJ-007 BOARD C	LR-018 BOARD	SW-410 BOARD A
CF-097 BOARD D	LS-067 BOARD	SY-096 BOARD D
DD-204 BOARD D	MT-067 BOARD	UA-003 BOARD
FP-748 BOARD	SI-037 BOARD	
LB-091 BOARD	ST-088 BOARD B	

5. REPAIR PARTS LIST

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  CND : Canadian model
  AUS : Australian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  J : Japanese model

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

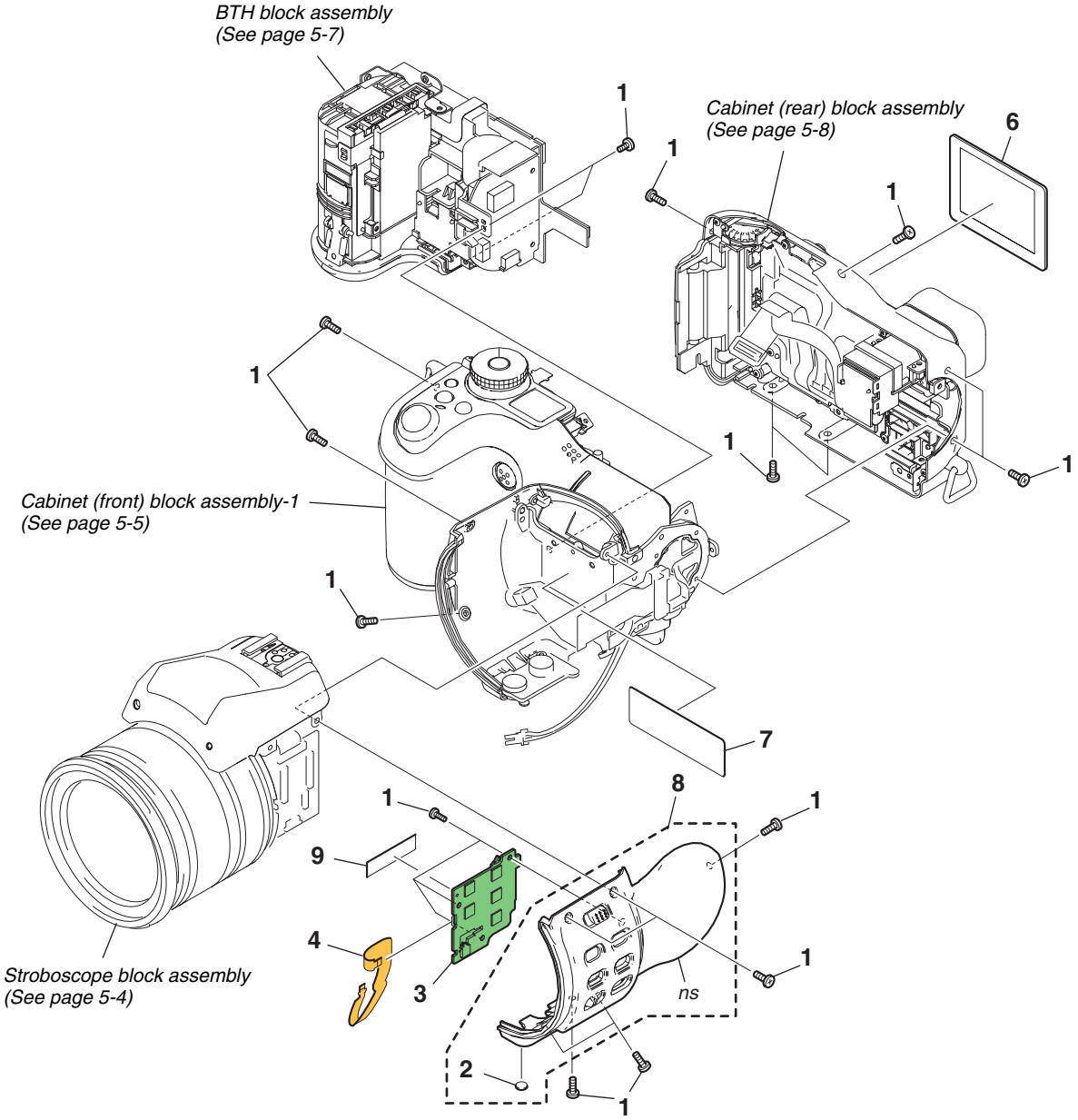
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. OVERALL SECTION

ns : not supplied



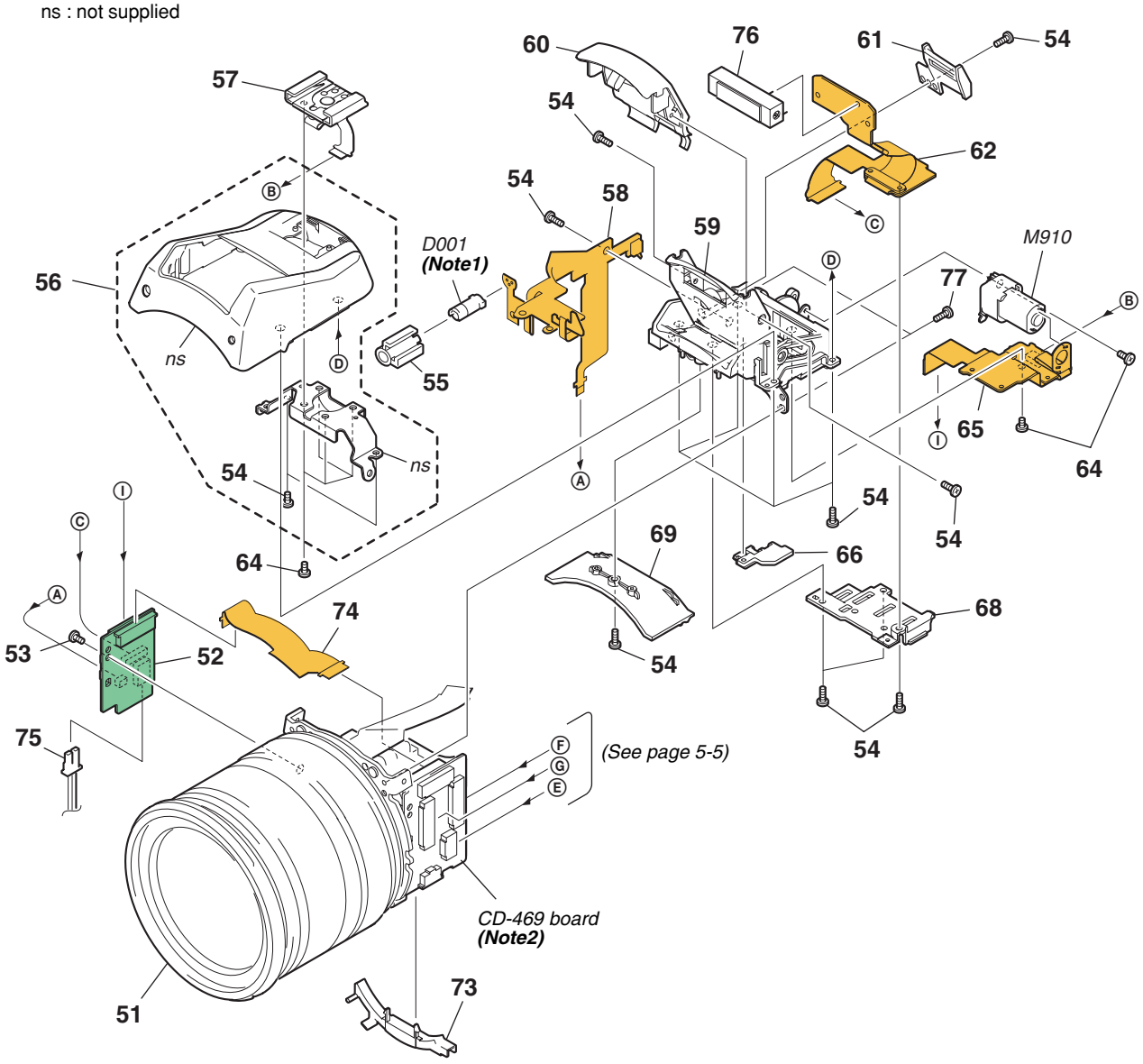
Ref. No.	Part No.	Description
1	3-080-203-31	SREW(M2),LOCK ACE,P2
2	3-051-124-01	FOOT, RUBBER
3	A-7078-878-A	SW-410 BOARD, COMPLETE
4	1-860-540-11	FP-751 FLEXIBLE BOARD
6	3-086-480-01	WINDOW, LCD
7	3-089-846-01	RADIATION SHEET (LL)
8	X-3953-809-1	CABINET (LR) ASSY
9	(Note)	TAPE (A)

Note :
For the part of 9: TAPE (A) (3-941-343-01) cut WOVEN (T0.25), FABRIC NON (3-076-631-01) into the desired length and use it.

5. REPAIR PARTS LIST

5-1-2. STROBOSCOPE BLOCK ASSEMBLY

ns : not supplied



Ref. No.	Part No.	Description
51	A-7112-735-A	REPAIR (EB08A) (LENS BLOCK ASSY)
52	A-7078-884-A	ST-088 BOARD, COMPLETE
53	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
54	3-080-222-11	SCREW (M1.7), TAPPING,P2
55	3-086-499-01	HOLDER, ST LASER
56	X-3953-801-1	CABINET ASSY, ST
57	1-818-099-11	CONNECTOR, SHOE
58	A-7078-891-A	LS-067 BOARD, COMPLETE
59	X-3953-800-2	ST ASSY
60	3-086-493-01	COVER, ST
61	3-086-494-01	HOLDER, ST UNIT
⚠62	A-7078-889-A	SI-037 BOARD, COMPLETE

Ref. No.	Part No.	Description
64	3-084-817-01	GRIP
65	A-7078-890-A	MT-067 BOARD, COMPLETE
66	3-086-498-01	GUIDE, STFPC
68	3-086-495-01	COVER, STFPC
69	3-086-496-01	COVER, ST BLIND
73	3-086-497-01	GUIDE, HARNESS
74	1-860-539-11	FP-750 FLEXIBLE BOARD
75	1-962-610-11	HARNESS (PT-132)
⚠76	1-478-445-11	FLASH UNIT
77	3-080-203-31	SCREW (M2), LOCK ACE, P2
⚠D001	1-805-470-51	LASER UNIT (Note1)
M910	1-787-055-11	MOTOR, STROBOSCOPE (FLASH/MOTOR)

Note1 :
Adjustment is needed when laser unit is replaced.

Note2 :
CD-469 board is included in the REPAIR (EB08A) (LENS BLOCK ASSY). CD-469 board is not supplied as a single board since removing it as a single board requires adjustment.

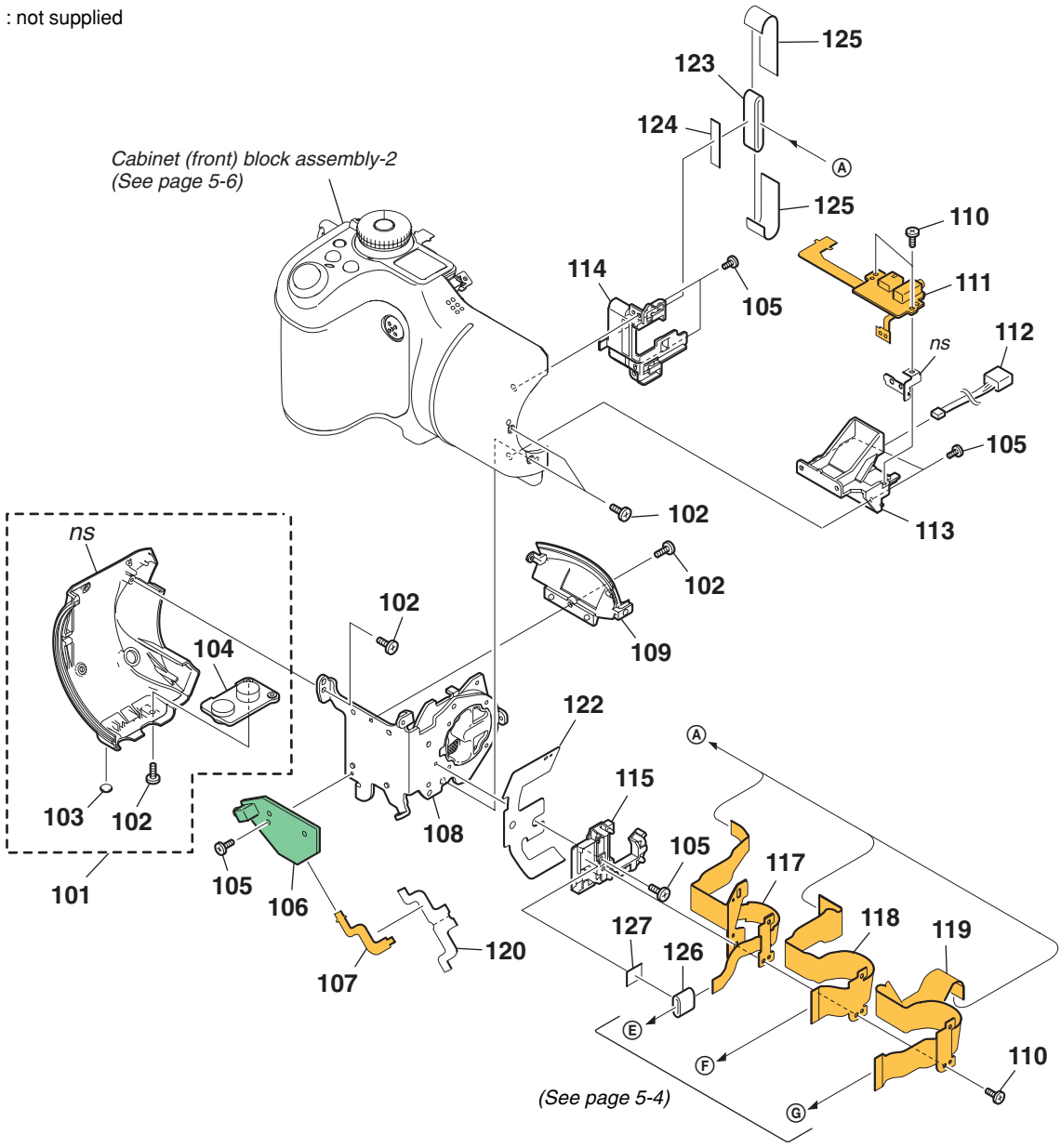
Note3 :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note3 :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

5-1-3. CABINET (FRONT) BLOCK ASSEMBLY-1

ns : not supplied



Ref. No.	Part No.	Description
101	X-3953-808-1	CABINET (LL) ASSY
102	3-080-203-31	SREW(M2),LOCK ACE,P2
103	3-051-124-01	FOOT, RUBBER
104	3-087-127-01	SCREW
105	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
106	A-7078-885-A	AJ-007 BOARD, COMPLETE
107	1-860-531-11	AJ-006 FLEXIBLE BOARD
108	X-3953-799-1	HINGE ASSY
109	3-086-490-01	COVER, ST (ST UNDER COVER)
110	3-080-222-11	SCREW(M1.7), TAPPING,P2
111	A-7078-888-A	UA-003 BOARD, COMPLETE
112	1-794-045-61	CONNECTOR, DC-IN
113	X-3953-879-2	HOLDER ASSY, JACK

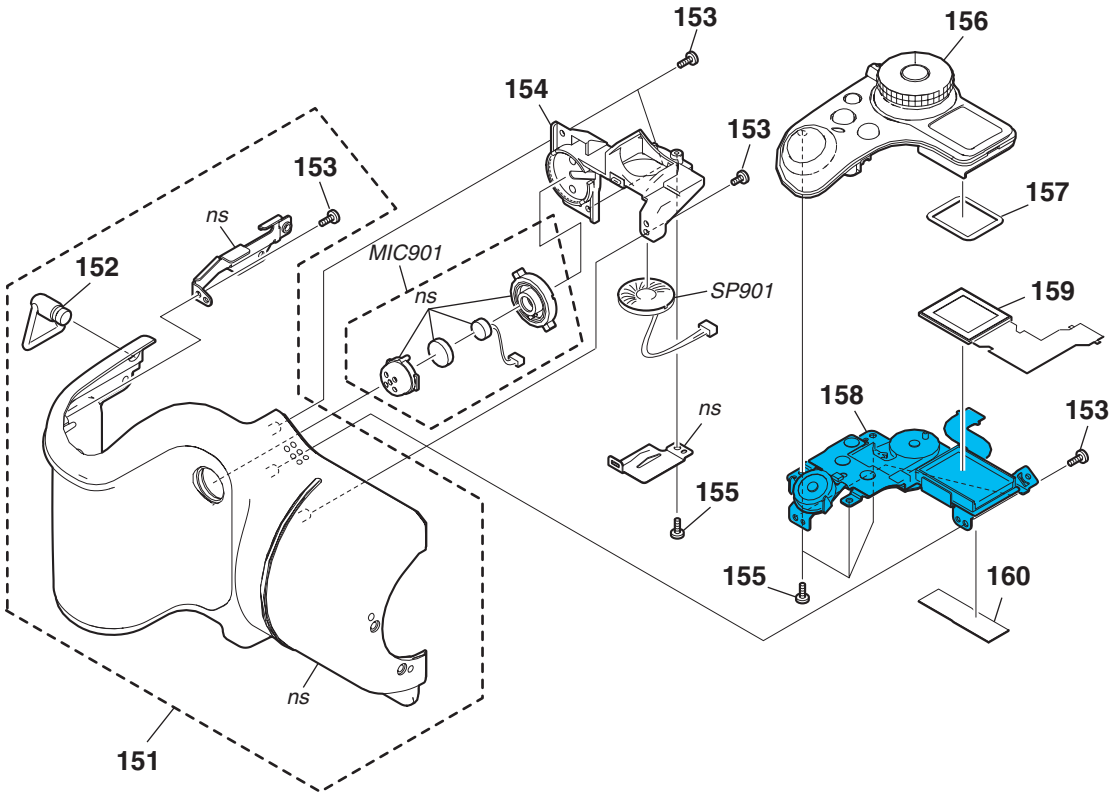
Ref. No.	Part No.	Description
114	3-086-485-01	GUIDE (L), FLEXIBLE
115	3-087-125-01	GUIDE (R), FLEXIBLE
117	1-860-541-11	FP-754 FLEXIBLE BOARD
118	1-860-535-11	FP-746 FLEXIBLE BOARD
119	1-860-536-11	FP-747 FLEXIBLE BOARD
120	3-090-857-01	SHEET (ACC)
122	3-089-843-01	RADIATION SHEET (LR)
123	1-400-689-11	FERRITE CORE
124	3-088-689-01	SHEET (F2) ADHESIVE
125	(Note)	TAPE (A)
126	1-400-687-11	FERRITE CORE
127	3-088-442-01	SHEET (F1) ADHESIVE

Note :
For the part of 125:TAPE (A) (3-941-343-01) cut WOVEN (T0.25), FABRIC NON (3-076-631-01) into the desired length and use it.

5. REPAIR PARTS LIST

5-1-4. CABINET (FRONT) BLOCK ASSEMBLY-2

ns : not supplied



Ref. No.	Part No.	Description
151	X-3953-802-1	CABINET (FRONT) ASSY
152	3-087-116-01	BRACKET (FRONT), STRAP
153	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
154	3-086-484-01	HOLDER, MICROPHONE
155	3-080-222-11	SCREW(M1.7), TAPPING,P2
156	X-3953-804-2	UPPER ASSY, CABINET

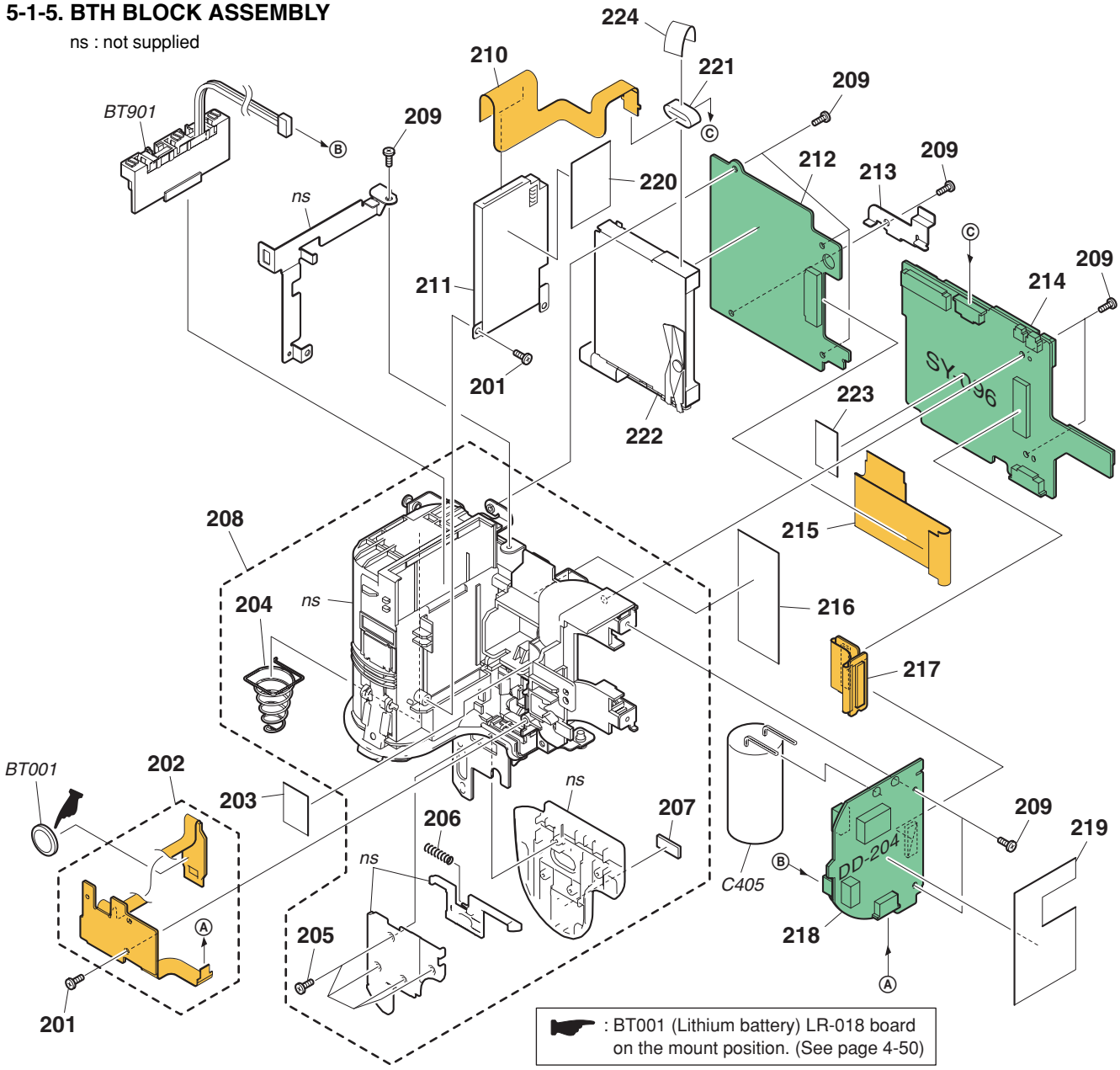
Ref. No.	Part No.	Description
157	3-087-108-01	CUSHION, MD
158	1-478-227-11	SWITCH BLOCK, CONTROL (TOP)
159	1-805-389-11	DISPLAY PANEL, LIQUID CRYSTAL
160	(Note)	TAPE (A)
MIC901	1-542-446-61	MICROPHONE
SP901	1-825-663-11	SPEAKER (1.6CM)

Note :
For the part of 160: TAPE (A) (3-941-343-01) cut WOVEN (T0.25), FABRIC NON (3-076-631-01) into the desired length and use it.

5. REPAIR PARTS LIST

5-1-5. BTH BLOCK ASSEMBLY

ns : not supplied



: BT001 (Lithium battery) LR-018 board on the mount position. (See page 4-50)

Ref. No.	Part No.	Description
201	3-080-222-11	SCREW(M1.7), TAPPING,P2
202	A-7078-880-A	LR-018 BOARD, COMPLETE
203	3-086-491-01	SHEET, CF RADIATION
204	3-969-380-01	SPRING, BATTERY
205	3-375-114-71	SCREW
206	3-050-594-01	SPRING, COMPRESSION
207	3-073-601-21	FOOT, RUBBER
208	X-3953-805-2	HOLDER ASSY, BT
209	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
210	1-860-538-11	FP-749 FLEXIBLE BOARD
211	1-815-853-13	CONNECTOR, MEMORY STICK
212	A-7078-879-A	CF-097 BOARD, COMPLETE
213	3-087-187-01	RETAINER, SY
214	A-7079-008-A	SY-096 BOARD, COMPLETE (SERVICE)
215	1-860-717-11	FP-756 FLEXIBLE BOARD

Ref. No.	Part No.	Description
216	3-087-188-01	SHEET (B), CF RADIATION
217	A-7078-881-A	FP-748 BOARD, COMPLETE
218	A-7078-883-A	DD-204 BOARD, COMPLETE
219	3-086-487-02	LABEL,FUSE REPLACEMENT CAUTION
220	3-090-807-01	SHEET (MS)
221	1-500-227-21	BEAD, FERRITE
222	1-818-138-11	CONNECTOR, CARD(COMPACT FLASH)
223	3-090-809-01	CUSHION (SY)
224	(Note1)	TAPE (A)
BT901	1-694-796-41	TERMINAL BOARD, BATTERY
⚠C405	1-100-734-11	CAP, ELECT (FLASH) 250MF 315V

CAUTION :
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

Note1 :
For the part of 224: TAPE (A) (3-941-343-01) cut WOVEN (T0.25), FABRIC NON (3-076-631-01) into the desired length and use it.

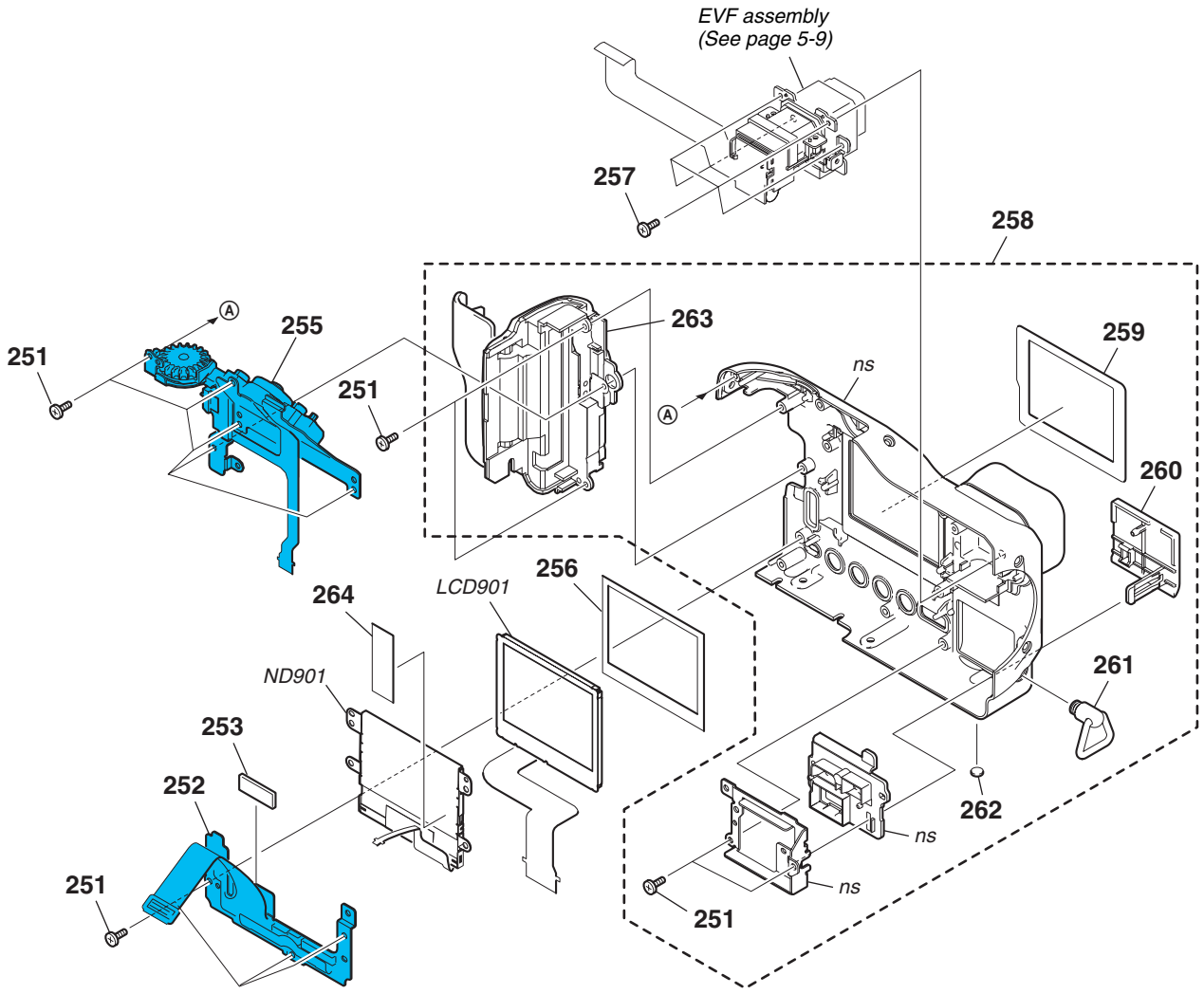
Note2 :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note2 :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

5-1-6. CABINET (REAR) BLOCK ASSEMBLY

ns : not supplied



Ref. No.	Part No.	Description
251	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
252	1-478-229-11	SWITCH BLOCK, CONTROL (UNDER)
253	3-090-369-01	TAPE (F3)
255	1-478-228-11	SWITCH BLOCK, CONTROL(MID)
256	3-086-488-01	CUSHION, LCD
257	3-080-222-11	SCREW(M1.7), TAPPING,P2
258	X-3953-806-2	CABINET (REAR) ASSY
259	3-087-155-03	SHEET, ADHESIVE, LCD WINDOW

Ref. No.	Part No.	Description
260	3-087-153-01	COVER, JACK
261	3-087-157-01	BRACKET, STRAP
262	3-051-124-01	FOOT, RUBBER
263	X-3953-944-1	LID, CF ASSY (SERVICE)
264	(Note1)	TAPE (A)
LCD901	1-805-380-21	INDICATOR MODULE LIQUID CRYST
⚠ ND901	1-478-145-11	BLOCK LIGHT GUIDE PLATE

Note1 :
For the part of 264: TAPE (A) (3-941-343-01) cut WOVEN (T0.25), FABRIC NON (3-076-631-01) into the desired length and use it.

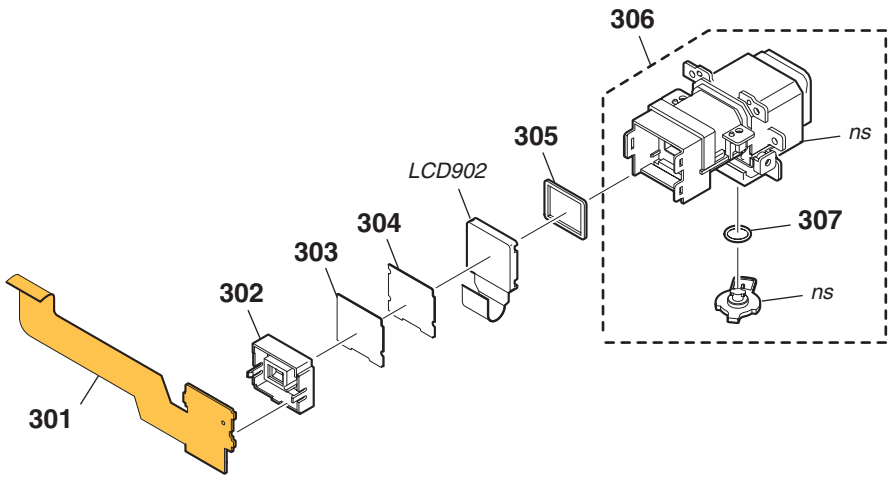
Note2 :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note2 :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

5-1-7. EVF ASSEMBLY

ns : not supplied



Ref. No.	Part No.	Description
301	A-7078-887-A	LB-091 BOARD, COMPLETE
302	3-072-214-01	GUIDE (20), LAMP
303	3-072-211-01	ILLUMINATOR
304	3-072-210-01	SHEET, PRISM
305	3-059-734-01	CUSHION (1), LCD
306	X-3953-807-1	EVF ASSY
307	3-950-044-01	RING, O
LCD902	8-753-039-35	LCX044AK-1

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description			
	A-7078-885-A	AJ-007 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C201	1-164-937-11	CERAMIC CHIP	0.001uF	10.00%	50V
C204	1-164-937-11	CERAMIC CHIP	0.001uF	10.00%	50V
		< CONNECTOR >			
CN201	1-817-548-11	CONNECTOR, FPC 6P			
		< DIODE >			
D201	1-216-295-11	METAL CHIP	0 (Note)		
D202	8-719-075-15	DIODE MAZT082H08S0			
D203	8-719-075-15	DIODE MAZT082H08S0			
		< FERRITE BEAD >			
FB201	1-469-179-21	FERRITE	0uH		
FB202	1-469-179-21	FERRITE	0uH		
FB203	1-469-179-21	FERRITE	0uH		
FB204	1-469-179-21	FERRITE	0uH		
FB205	1-469-179-21	FERRITE	0uH		
		< JACK >			
J201	1-793-995-21	JACK, SUPER SMALL TYPE (ACC (Accesory))			
	A-7078-879-A	CF-097 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C102	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C103	1-100-662-11	TANTAL. CHIP	47uF	20%	6.3V
		< CONNECTOR >			
CN101	1-794-505-21	CONNECTOR, FPC (ZIF) 51P			
CN103	1-818-139-11	PIN, CONNECTOR (CF CARD) 50P			
		< DIODE >			
D101	8-719-073-01	DIODE MA111-(K8).S0			
		< FERRITE BEAD >			
FB101	1-469-775-21	FERRITE	0uH		
		< RESISTOR >			
R101	1-216-864-11	METAL CHIP	0	5%	1/16W
R102	1-218-937-11	RES-CHIP	47	5%	1/16W
R103	1-218-937-11	RES-CHIP	47	5%	1/16W
R104	1-218-990-11	SHORT CHIP	0		
R105	1-218-937-11	RES-CHIP	47	5%	1/16W
R106	1-218-937-11	RES-CHIP	47	5%	1/16W
R107	1-218-937-11	RES-CHIP	47	5%	1/16W
R108	1-218-937-11	RES-CHIP	47	5%	1/16W
R109	1-218-937-11	RES-CHIP	47	5%	1/16W
R110	1-218-937-11	RES-CHIP	47	5%	1/16W
R111	1-218-937-11	RES-CHIP	47	5%	1/16W
R112	1-218-937-11	RES-CHIP	47	5%	1/16W
R113	1-218-937-11	RES-CHIP	47	5%	1/16W
R114	1-218-937-11	RES-CHIP	47	5%	1/16W
R116	1-218-937-11	RES-CHIP	47	5%	1/16W
R117	1-218-937-11	RES-CHIP	47	5%	1/16W
R118	1-218-937-11	RES-CHIP	47	5%	1/16W
R119	1-218-937-11	RES-CHIP	47	5%	1/16W
R120	1-218-937-11	RES-CHIP	47	5%	1/16W
R121	1-218-937-11	RES-CHIP	47	5%	1/16W
R122	1-218-937-11	RES-CHIP	47	5%	1/16W
R123	1-218-937-11	RES-CHIP	47	5%	1/16W
R124	1-218-937-11	RES-CHIP	47	5%	1/16W
R125	1-218-937-11	RES-CHIP	47	5%	1/16W
R126	1-218-937-11	RES-CHIP	47	5%	1/16W
R127	1-218-937-11	RES-CHIP	47	5%	1/16W
	A-7078-883-A	DD-204 BOARD, COMPLETE			
		**********			
		(C405 is not included in this completed board)			
		< CAPACITOR >			
C001	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C002	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C003	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C004	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C005	1-107-819-11	CERAMIC CHIP	0.022uF	10.00%	16V
C006	1-165-176-11	CERAMIC CHIP	0.047uF	10.00%	16V
C007	1-162-964-91	CERAMIC CHIP	0.001PF	10%	50V
C008	1-107-819-11	CERAMIC CHIP	0.022uF	10.00%	16V
C009	1-119-923-11	CERAMIC CHIP	0.047uF	10.00%	10V
C011	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C012	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C013	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C014	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C016	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C018	1-162-967-91	CERAMIC CHIP	0.0033uF	10%	50V
C019	1-162-969-91	CERAMIC CHIP	0.0068uF	10%	50V
C027	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C028	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C029	1-125-889-91	CERAMIC CHIP	2.2uF	10%	10V
C030	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C031	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C032	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C033	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C034	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C035	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C038	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C039	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C040	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C041	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C042	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C043	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C044	1-115-566-11	CERAMIC CHIP	4.7uF	10.00%	10V
C045	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C046	1-115-566-11	CERAMIC CHIP	4.7uF	10.00%	10V
C053	1-165-908-11	CERAMIC CHIP	1uF	10%	10V

Note :
Resistor is mounted to the location where D201 is printed.

Ref. No.	Part No.	Description			
C058	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C062	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C065	1-135-993-11	TANTAL. CHIP	33uF	20%	10V
C066	1-100-662-11	TANTAL. CHIP	47uF	20%	6.3V
C067	1-119-751-11	TANTAL. CHIP	22uF	20.00%	16V
C068	1-119-751-11	TANTAL. CHIP	22uF	20.00%	16V
C069	1-119-751-11	TANTAL. CHIP	22uF	20.00%	16V
C070	1-119-751-11	TANTAL. CHIP	22uF	20.00%	16V
C401	1-100-055-11	CERAMIC CHIP	22uF	20%	16V
C402	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C404	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
⚠C405	1-100-734-11	CAP, ELECT (FLASH) 250MF			315V
C406	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
		< CONNECTOR >			
CN001	1-691-550-11	PIN, CONNECTOR (1.5MM)(SMD) 3P			
CN002	1-691-550-51	PIN, CONNECTOR (1.5MM)(SMD) 3P			
CN401	1-815-494-11	PIN, CONNECTOR 2P			
CN601	1-778-598-21	CONNECTOR, BOARD TO BOARD 60P			
CN602	1-766-336-21	CONNECTOR, FFC/FPC 6P			
		< DIODE >			
D001	8-719-421-67	DIODE MA132WK-(K8).SO			
D002	8-719-075-15	DIODE MAZT082H08S0			
D003	8-719-158-49	DIODE MA8120-TX			
D004	8-719-027-76	DIODE 1SS357-TPH3			
D006	8-719-027-76	DIODE 1SS357-TPH3			
D007	8-719-073-03	DIODE MA8082-(K8).S0			
D010	8-719-081-19	DIODE 1SS383(T5RSONY1)			
D011	8-719-081-19	DIODE 1SS383(T5RSONY1)			
D401	8-719-073-01	DIODE MA111-(K8).S0			
⚠D402	6-500-237-01	DIODE HAU160C030TP			
D403	8-719-048-98	DIODE RB160L-40TE25			
		< FUSE >			
⚠F001	1-576-406-21	FUSE 1.4A/32V			
⚠F002	1-576-406-21	FUSE 1.4A/32V			
⚠F003	1-576-406-21	FUSE 1.4A/32V			
⚠F004	1-576-406-21	FUSE 1.4A/32V			
⚠F005	1-576-406-21	FUSE 1.4A/32V			
⚠F006	1-576-406-21	FUSE 1.4A/32V			
		< FERRITE BEAD >			
FB001	1-414-228-11	FERRITE	0uH		
		< IC >			
IC001	6-703-429-01	IC MB44A120APFV-G-BND-ERE1			
IC004	6-704-874-01	IC XC62KS0PXXMR			
		< COIL >			
L001	1-419-881-11	INDUCTOR	47uH		
L002	1-456-137-11	INDUCTOR	22uH		
L003	1-424-846-11	INDUCTOR	0uH		
L004	1-456-137-11	INDUCTOR	22uH		
L005	1-456-137-11	INDUCTOR	22uH		
L006	1-456-136-21	INDUCTOR	10uH		
L007	1-456-137-11	INDUCTOR	22uH		
L010	1-414-392-41	INDUCTOR	1uH		
L401	1-412-027-11	INDUCTOR	2.2uH		
		< LINE FILTER >			
LF001	1-411-957-11	FILTER, COMMON MODE			
		< TRANSISTOR >			
Q001	8-729-047-68	TRANSISTOR	SSM3K03FE(TPL3)		
Q002	8-729-051-49	TRANSISTOR	HAT1054R-EL		
Q003	8-729-804-41	TRANSISTOR	2SB1122-ST-TD-E		
Q004	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q006	8-729-056-00	TRANSISTOR	MCH3310-TL-E		
Q007	8-729-053-76	TRANSISTOR	CPH5802-TL-E		
Q008	8-729-053-76	TRANSISTOR	CPH5802-TL-E		
Q009	8-729-053-76	TRANSISTOR	CPH5802-TL-E		
Q010	8-729-053-76	TRANSISTOR	CPH5802-TL-E		
Q011	8-729-053-76	TRANSISTOR	CPH5802-TL-E		
Q012	8-729-053-76	TRANSISTOR	CPH5802-TL-E		
Q014	8-729-054-48	TRANSISTOR	N1B04FE-Y/GR(TPLR3)		
Q015	6-550-560-01	TRANSISTOR	LS5U17LPTL		
Q401	8-729-048-50	TRANSISTOR	2SK3018-T106		
Q402	8-729-426-31	TRANSISTOR	XP1214-TXE		
Q407	6-550-308-01	TRANSISTOR	CPH3205-SONY-TL-E		
		< RESISTOR >			
R002	1-218-990-11	SHORT CHIP	0		
R005	1-218-985-11	RES-CHIP	470K	5%	1/16W
R008	1-218-969-11	RES-CHIP	22K	5%	1/16W
R009	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R011	1-218-990-11	SHORT CHIP	0		
R012	1-218-971-11	RES-CHIP	33K	5%	1/16W
R013	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R014	1-218-985-11	RES-CHIP	470K	5%	1/16W
R016	1-218-989-11	RES-CHIP	1M	5%	1/16W
R017	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R018	1-208-930-11	METAL CHIP	62K	0.5%	1/16W
R019	1-216-150-91	RES-CHIP	10	5%	1/8W
R020	1-218-975-11	RES-CHIP	68K	5%	1/16W
R022	1-218-953-11	RES-CHIP	1K	5%	1/16W
R023	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R024	1-218-969-11	RES-CHIP	22K	5%	1/16W
R025	1-218-969-81	RES-CHIP	22K	5%	1/16W
R028	1-218-975-11	RES-CHIP	68K	5%	1/16W
R029	1-208-711-11	METAL CHIP	15K	0.5%	1/16W
R030	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R031	1-218-969-11	RES-CHIP	22K	5%	1/16W
R032	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R033	1-218-975-11	RES-CHIP	68K	5%	1/16W
R034	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R035	1-208-713-11	METAL CHIP	18K	0.5%	1/16W
R036	1-218-977-11	RES-CHIP	100K	5%	1/16W
R039	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R040	1-218-949-11	RES-CHIP	470	5%	1/16W
R041	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R042	1-208-927-11	METAL CHIP	47K	0.5%	1/16W

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			
R043	1-218-965-11	RES-CHIP	10K	5%	1/16W
R044	1-218-977-11	RES-CHIP	100K	5%	1/16W
R048	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R049	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R401	1-218-965-11	RES-CHIP	10K	5%	1/16W
R402	1-218-973-11	RES-CHIP	47K	5%	1/16W
R403	1-218-967-11	RES-CHIP	15K	5%	1/16W
R404	1-218-942-11	RES-CHIP	120	5%	1/16W
R405	1-218-973-11	RES-CHIP	47K	5%	1/16W
		< TRANSFORMER >			
⚠T401	1-443-157-21	TRANSFORMER, D.C.-D.C. CONVERT			
	A-7078-881-A	FP-748 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-778-598-21	CONNECTOR, BOARD TO BOARD 60P			
CN002	1-778-593-21	CONNECTOR, BOARD TO BOARD 60P			
	A-7078-887-A	LB-091 BOARD, COMPLETE			
		**********			
CN001	1-817-550-11	CONNECTOR, FPC 18P			
		< DIODE >			
D001	6-500-375-01	DIODE NSCW455T-TC9 (BACKLIGHT)			
	A-7078-880-A	LR-018 BOARD, COMPLETE			
		**********			
		< BATTERY >			
⚠BT001	1-756-191-31	BATTERY, LITHIUM (SECONDARY)			
		< SWITCH >			
S001	1-692-088-11	SWITCH, TACTILE (RESET)			
	A-7078-891-A	LS-067 BOARD, COMPLETE			
		**********			
		(D001 is not included in this completed board)			
		< DIODE >			
⚠D001	1-805-470-51	LASER UNIT (Note1)			
D002	8-719-073-03	DIODE MA8082-(K8).S0			
D003	8-719-073-03	DIODE MA8082-(K8).S0			
D004	8-719-064-07	DIODE SML-310LTT86 (Self-timer)			
		< SWITCH >			
S001	1-786-180-31	SWITCH, PUSH (1KEY) (FLASH OPEN DETECT)			
	A-7078-890-A	MT-067 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-794-767-31	CONNECTOR, FPC 10P			
		< SWITCH >			
S001	1-786-179-31	SWITCH, PUSH (1KEY) (MOTOR POSITION DETECT)			
⚠	A-7078-889-A	SI-037 BOARD, COMPLETE			
		**********			
		< DIODE >			
D001	6-500-512-01	DIODE CL-330IRS-X-TU (Infrared ray emitter)			
		< COIL >			
L001	1-456-193-11	COIL, TRIGGER			
	A-7078-884-A	ST-088 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C501	1-164-943-11	CERAMIC CHIP	0.01uF	10.00%	16V
C502	1-125-777-11	CERAMIC CHIP	0.1uF	10.00%	10V
C503	1-137-723-21	CERAMIC CHIP	0.047uF	10%	250V
C504	1-100-761-21	CERAMIC CHIP	0.01uF	10%	250V
C505	1-165-875-11	CERAMIC CHIP	10uF	10%	10V
C506	1-164-949-11	CERAMIC CHIP	0.047uF		16V
		< CONNECTOR >			
CN501	1-766-352-21	CONNECTOR, FFC/FPC 22P			
CN502	1-815-494-11	PIN, CONNECTOR 2P			
CN503	1-778-164-21	CONNECTOR, FFC/FPC (ZIF) 16P			
CN504	1-779-327-11	CONNECTOR, FFC/FPC 6P			
CN505	1-779-337-11	CONNECTOR, FFC/FPC 26P			
		< DIODE >			
D502	8-719-075-15	DIODE MAZT082H08S0			
D503	8-719-073-03	DIODE MA8082-(K8).S0			
D504	8-719-123-76	THYRISTOR 03P4J-T1			
D506	8-749-017-19	DIODE 02DZ10-TPH3			
D507	6-500-811-01	DIODE RR255L-400TE25			
D508	8-719-027-76	DIODE 1SS357-TPH3			
		< FERRITE BEAD >			
FB501	1-469-179-21	FERRITE	0uH		
FB502	1-469-179-21	FERRITE	0uH		
FB503	1-469-179-21	FERRITE	0uH		
FB504	1-469-179-21	FERRITE	0uH		
FB505	1-469-179-21	FERRITE	0uH		
		< IC >			
IC502	8-729-053-74	TRANSISTOR CY25AAJ-8-T13			

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Note1 :
Adjustment is needed when laser unit is replaced.

Note2 :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note2 :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			
		< TRANSISTOR >			
Q501	6-550-237-01	TRANSISTOR	2SC5658T2LQ/R		
Q502	8-729-042-58	TRANSISTOR	UN9111J-(K8).SO		
Q503	8-729-053-57	TRANSISTOR	RN1902FE(TPLR3)		
Q504	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
		< RESISTOR >			
R503	1-218-953-11	RES-CHIP	1K	5%	1/16W
R505	1-218-937-11	RES-CHIP	47	5%	1/16W
R506	1-218-989-11	RES-CHIP	1M	5%	1/16W
R507	1-216-121-11	RES-CHIP	1M	5%	1/10W
R508	1-218-949-11	RES-CHIP	470	5%	1/16W
R509	1-220-254-11	RES-CHIP	56	5%	1/4W
R510	1-220-254-11	RES-CHIP	56	5%	1/4W
R511	1-216-097-11	RES-CHIP	100K	5%	1/10W
R512	1-216-864-11	METAL CHIP	0	5%	1/16W
R513	1-218-943-11	RES-CHIP	150	5%	1/16W
R514	1-218-965-11	RES-CHIP	10K	5%	1/16W
	A-7078-878-A	SW-410 BOARD, COMPLETE **********			
		< CONNECTOR >			
CN001	1-817-548-11	CONNECTOR, FPC 6P			
		< RESISTOR >			
R001	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R002	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R003	1-216-837-11	METAL CHIP	22K	5%	1/16W
R004	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R005	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
		< SWITCH >			
S001	1-786-179-11	SWITCH, PUSH (1KEY) (OPEN(FLASH))			
S002	1-771-138-82	SWITCH, KEY BOARD (FLASH)			
S003	1-771-138-82	SWITCH, KEY BOARD (MACRO)			
S004	1-786-179-11	SWITCH, PUSH (1KEY) (FOCUS (AUTO/MANUAL))			
S005	1-771-138-82	SWITCH, KEY BOARD (METERING MODE)			
S006	1-771-138-82	SWITCH, KEY BOARD (BURST/BRACKET)			
S007	1-771-138-82	SWITCH, KEY BOARD (NIGHT SHOT/NIGHT FRAMING)			

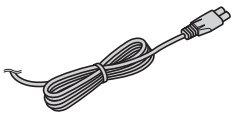
Ref. No.	Part No.	Description
		SY-096 BOARD, COMPLETE (SERVICE) **********

Electrical parts list of the SY-096 board is not shown.
Pages from 5-14 to 5-18 are not shown.

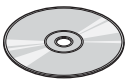
Ref. No.	Part No.	Description			
	A-7078-888-A	UA-003 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-794-962-11	CONNECTOR, SQUARE TYPE(USB 5P)			
		< DIODE >			
D001	8-719-075-15	DIODE MAZT082H08S0			
D002	8-719-073-03	DIODE MA8082-(K8).S0			
D003	8-719-075-15	DIODE MAZT082H08S0			
D004	8-719-073-01	DIODE MA111-(K8).S0			
		< FERRITE BEAD >			
FB001	1-500-444-11	FERRITE	0uH		
		< JACK >			
J001	1-569-950-31	JACK (SMALL TYPE) (AUDIO/VIDEO)			
		< LINE FILTER >			
LF001	1-456-583-11	INDUCTOR	0uH		
		< RESISTOR >			
R001	1-216-295-91	SHORT CHIP	0		
R002	1-216-295-91	SHORT CHIP	0		
R003	1-216-821-11	METAL CHIP	1K	5%	1/16W
R004	1-216-295-91	SHORT CHIP	0		
R005	1-216-295-91	SHORT CHIP	0		
R006	1-216-864-11	METAL CHIP	0	5%	1/16W

Checking supplied accessories.

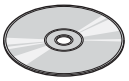
Make sure that the following accessories are supplied with your digital still camera.



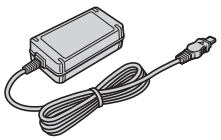
Power cord (Main lead) (1)
(AEP, E model)
⚠ 1-769-608-11
Power cord (Main lead) (1)
(AUS model)
⚠ 1-696-819-11
Power cord (Main lead) (1)
(UK, HK model)
⚠ 1-783-374-11
Power cord (Main lead) (1)
(US, CND model)
⚠ 1-790-107-22
Power cord (Main lead) (1)
(JE, J model)
⚠ 1-790-732-12
Power cord (Main lead) (1)
(KR model)
⚠ 1-776-985-11
Power cord (Main lead) (1)
(CH model)
⚠ 1-782-476-13



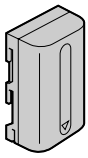
CD-ROM
(SPVD-013 (I) USB Driver) (1)
(US, CND, J model)
3-087-331-01
CD-ROM
(SPVD-013 USB Driver) (1)
(AEP, UK, E, HK, JE, KR, AUS, CH model)
3-087-330-01



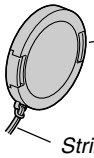
CD-ROM
(Image Data Converter) (1)
3-087-661-01



AC adaptor (1) (AC-L15A)
⚠ 1-477-533-51



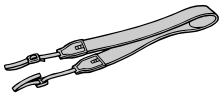
NP-FM50 battery pack (1)
(not supplied)



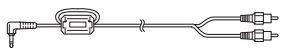
Lens cap (1)
X-3952-016-1

String assy cap
X-3953-980-1

Lens hood (1)
3-086-481-01

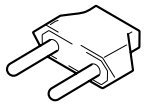


S-houlder strap (1)
3-071-638-11

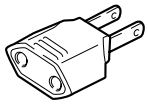


A/V connecting cable (1)
1-824-111-11

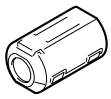
USB cable (1)
1-827-038-11



2-pin conversion adaptor (1)
(JE model)
1-569-007-12



2-pin conversion adaptor (1)
(E model)
1-569-008-12



Clamp filter (Ferrite core) (for AC-L15A)
1-543-798-21

Other accessories

3-084-996-01 MANUAL, INSTRUCTION (JAPANESE)(J)
3-084-996-11 MANUAL, INSTRUCTION(ENGLISH)
(US,CND,AEP,UK,E,AUS,CH,JE,HK)
3-084-996-21 MANUAL, INSTRUCTION (FRENCH/GERMAN)(CND,AEP)
3-084-996-31 MANUAL, INSTRUCTION (SPANISH/PORTUGUESE)
(AEP,E,JE)
3-084-996-41 MANUAL, INSTRUCTION (ITALIAN/DUTCH)(AEP)

3-084-996-51 MANUAL, INSTRUCTION (TRADITIONALCHINESE)
(E,CH,JE,HK)
3-084-996-61 MANUAL, INSTRUCTION (RUSSIAN/SWEDISH)(AEP)
3-084-996-71 MANUAL, INSTRUCTION (ARABIC)(E)
3-084-996-81 MANUAL, INSTRUCTION (KOREAN)(JE,KR)
3-084-997-01 MANUAL, INSTRUCTION (JAPANESE)(J)

3-087-904-01 MANUAL INSTRUCTION, RAW (JAPANESE)(J)
3-087-904-11 MANUAL INSTRUCTION, RAW
(ENGLISH/FRENCH/GERMAN/SPANISH/ITALIAN/DUTCH/
PORTUGUESE/TRADITIONAL CHINESE/
SIMPLIFIED CHINESE)(EXCEPT J)

- Abbreviation
  CND : Canadian model
  AUS : Australian model
  CH : Chinese model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  J : Japanese model

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

9-876-279-31

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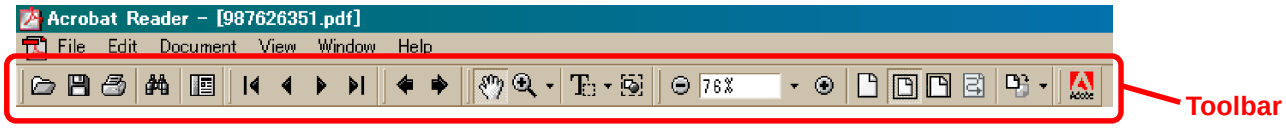
[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

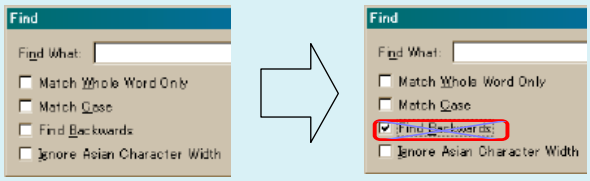
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

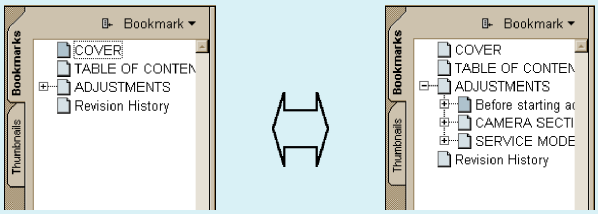
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

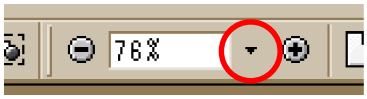
Moving with bookmark:
Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.12	Official Release	—	—

DSC-F828

Ver 1.0 2003. 12
Revision History

How to use Acrobat Reader

SECTION 6 ADJUSTMENTS

ADJ

Link

- Before starting adjustment
  - Adjusting items when replacing main parts and boards
- ADJUSTMENT
  - PREPARATIONS BEFORE ADJUSTMENT
  - INITIALIZATION OF DATA
  - VIDEO SYSTEM ADJUSTMENTS
  - CAMERA SYSTEM ADJUSTMENTS
  - COLOR ELECTRONIC VIEW FINDER ADJUSTMENT
  - LCD SYSTEM ADJUSTMENT
- SERVICE MODE
  - APPLICATION FOR ADJUSTMENT (SEUS)
  - SERVICE MODE

Contents of LEVEL 2 and LEVEL 3 Service Manual

CONTENTS	LEVEL 2	LEVEL 3
1. SERVICE NOTE	○	×
2. DISASSEMBLY	○	×
3. BLOCK DIAGRAMS	OVERALL POWER	×
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	DD-204, LR-018, ST-088, LS-067, MT-067, SI-037, UA-003, LB-091, CF-097, SW-410, AJ-007 BOARD CONTROL SWITCH BLOCK (TOP)/(MID)/(UNDER)	SY-096 BOARD
5. REPAIR PARTS LIST	EXPLODED VIEWS	×
	ELECTRICAL PARTS	○ (SY-096 BOARD)

SONY®

9-876-279-51

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* Color reproduction frame is shown on page 6-43.
* AF illumination frame is shown on page 6-44.

SECTION 6
ADJUSTMENTS

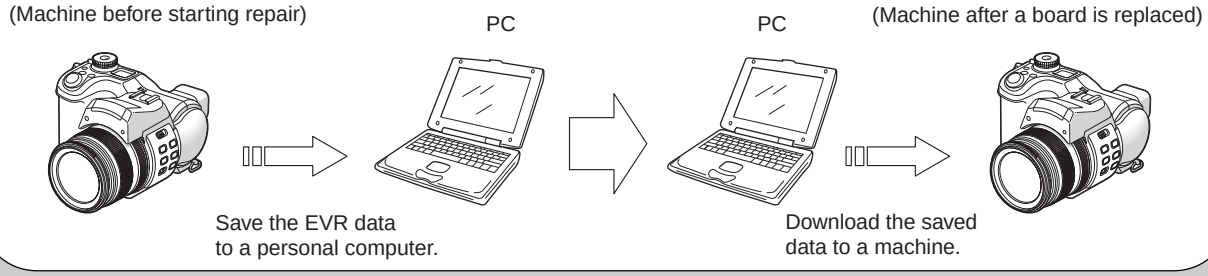
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

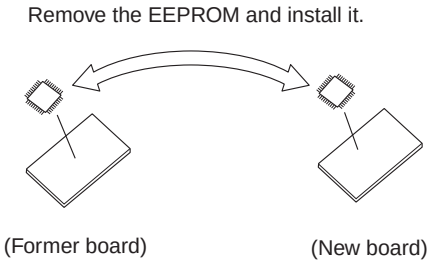
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



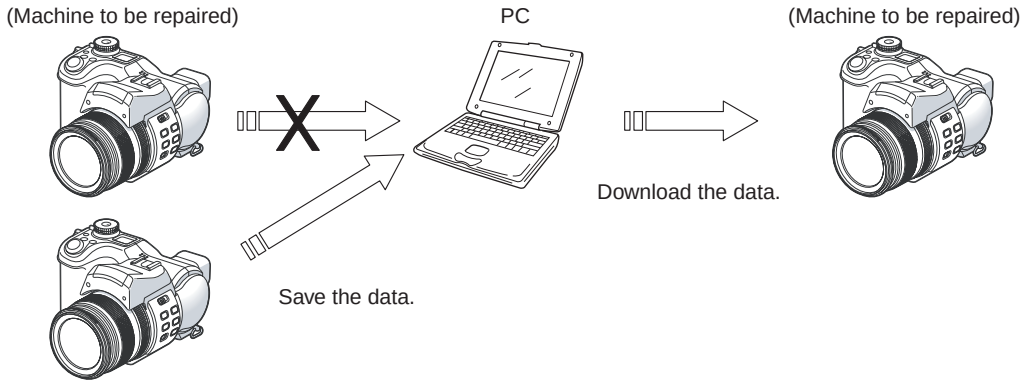
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 6-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	Xenon tube	EVF block LCD unit (LCD902)	LCD block LCD unit (LCD901)	LCD block Back light unit	Mounted Parts replacement: LB-091 board D001 (EVF back light)	LS-067 board D001 (Laser unit)	SY-096 board IC301 (Camera DSP)	SY-096 board IC303 (Video amp.)	SY-096 board IC801 (LCD DRIVER)	SY-096 board IC902 (EVF DRIVER)	Board replacement: LB-091 board (COMPLETE)	LS-067 board (COMPLETE)	SY-096 board (COMPLETE)	EEPROM replacement: SY-096 board IC501 (Camera DSP) (With built-in flash memory)
Initialization of data	Initialization of data														●	●
Video	Video output level adj.								●	●					●	●
Camera	Iris reset sensor adj.	●													●	●
	Flange back adj.	●													●	●
	Color shade check	●													●	●
	F No. compensation	●													●	●
	Mechanical shutter adj.	●													●	●
	Light value adj.	●													●	●
	Linear matrix adj.	●													●	●
	AWB 3200K standard data input	●													●	●
	AWB 5800K standard data input	●													●	●
	Color reproduction check	●													●	●
	CCD linearity check	●													●	●
	CCD white defect compensation check	●													●	●
	CCD black defect compensation check	●													●	●
	Strobe adj.	●	●												●	●
	AF laser output adj.	●						●						●	●	●
EVF	EVF initial data input														●	●
	VCO adj.											●			●	●
	Bright adj.											●			●	●
	Contrast adj.								●			●			●	●
	V COM adj.											●			●	●
	White balance adj.			●			●					●	●		●	●
LCD	LCD initial data input														●	●
	VCO adj.										●				●	●
	Contrast adj.								●		●				●	●
	V COM adj.				●						●				●	●
	White balance adj.				●	●					●				●	●

Table. 6-1-1.

6-1. ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope • AC power adapter
• Calculator which can hexadecimal calculation.

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	Pattern box PTB-450	J-6082-200-A	
J-3	Color bar chart for pattern box	J-6020-250-A	
J-4	Siemens star chart	J-6080-875-A	For checking the flange back
J-5	Clear chart for pattern box	J-6080-621-A	
J-6	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-7	Camera table	J-6082-384-A	For adjusting the flange back
J-8	Personal computer with Windows98/ME/2000/XP installed and with two USB ports		
J-9	USB cable	1-823-932-11	For connecting the personal computer
J-10	Application for adjustment (SEUS) and HASP key		Contact our service headquarter of each area how to get the application for adjustment (SEUS) and HASP key
J-11	Background paper	J-2501-130-A	For adjusting the strobe

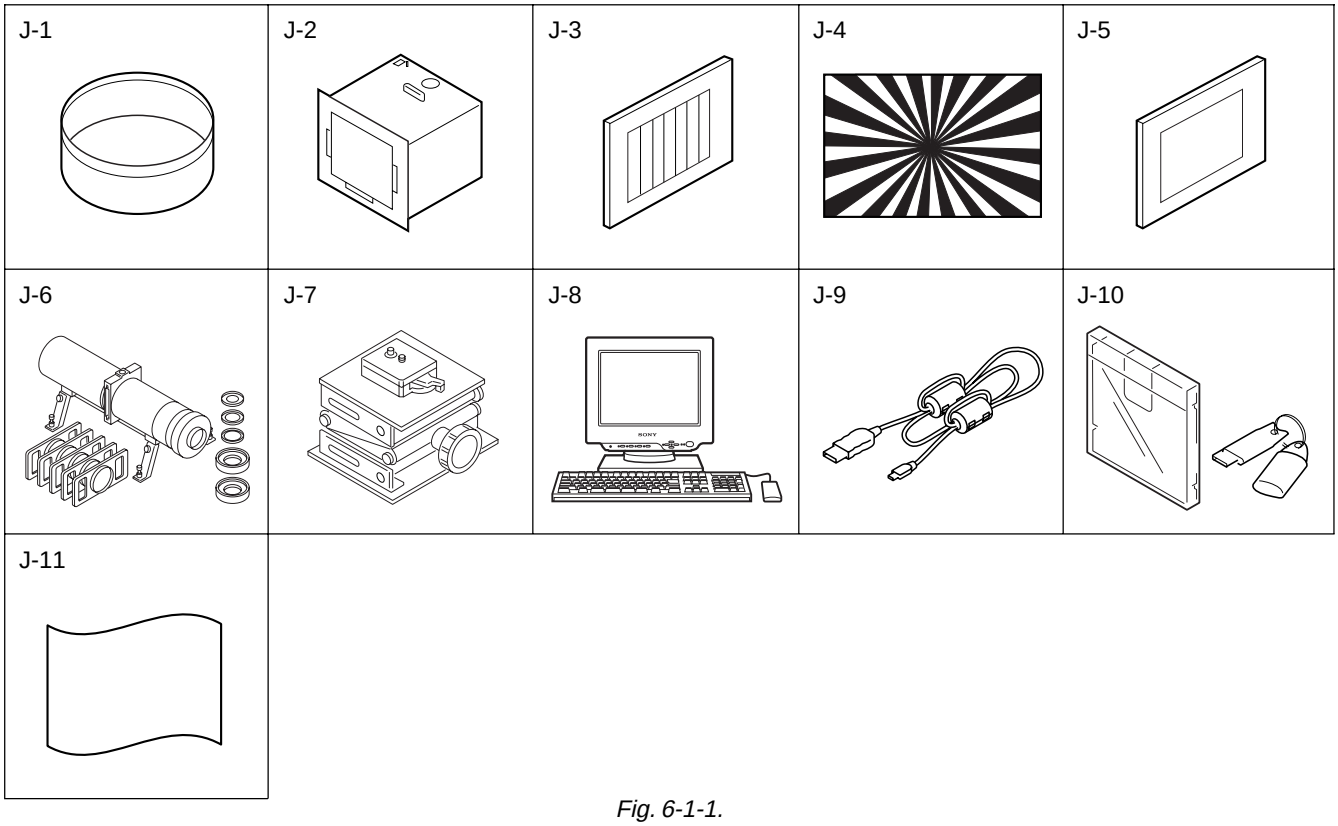


Fig. 6-1-1.

1-1-2. Preparations

1) Connect the equipment for adjustments according to Fig. 6-1-4.
2) Set the MS/CF switch to MS (Memory stick).
3) Start up the application for adjustment (SEUS).

Note1: Setting the "Forced Power ON Mode (Forced STILL Mode)"
1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and write data: 11.
3) Save the data.
4) Wait for 2 sec.
The above procedure will enable the power (STILL mode) to be turned on with POWER switch (Control switch block (TOP)) disconnected. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note2: Setting the "Forced Power ON Mode (Forced PLAY Mode)"
1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and write data: 12.
3) Save the data.
4) Wait for 2 sec.
The above procedure will enable the power (PALY mode) to be turned on with POWER switch (Control switch block (TOP)) disconnected. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note3: Exiting the "Forced Power ON Mode"
1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and write data: 80.
3) Save the data.
4) Wait for 2 sec.
5) Select page: 00, address: 01, and set data: 00.

1-1-3. Discharging of the flashlight power supply

The capacitor which is used as power supply of flashlight is charged with 200V to 300V voltage. When disassembling the unit, discharge this voltage in order to protect service engineers from electric shock.

Discharge procedure

1. Remove the power supply (AC power adaptor or battery).
2. Fabricate the discharging jig as shown in Fig. 6-1-3. locally by yourself. Connect the discharging jig to the positive (+) and negative (–) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.

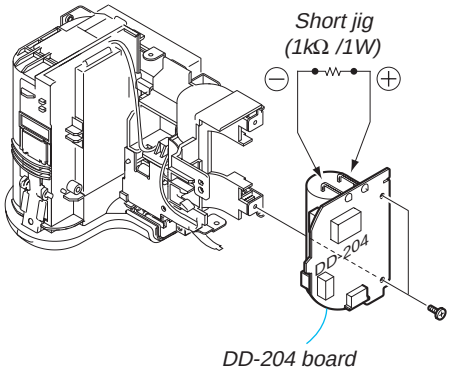


Fig. 6-1-3.

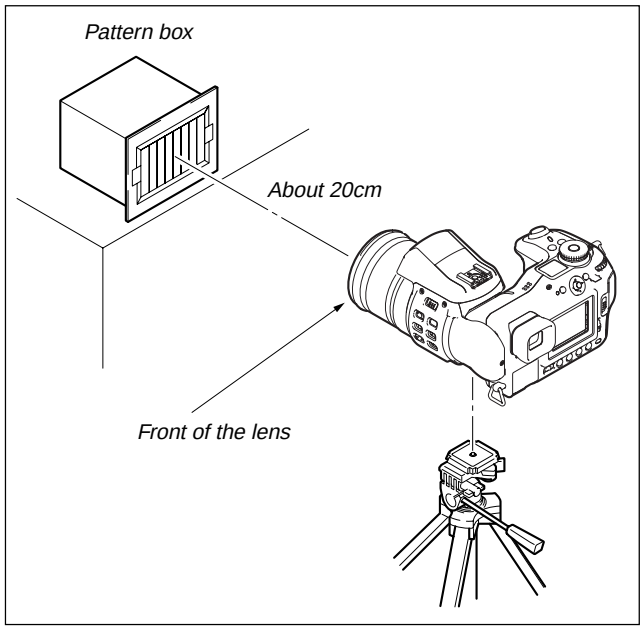


Fig. 6-1-2.

[CONNECTION OF EQUIPMENT]

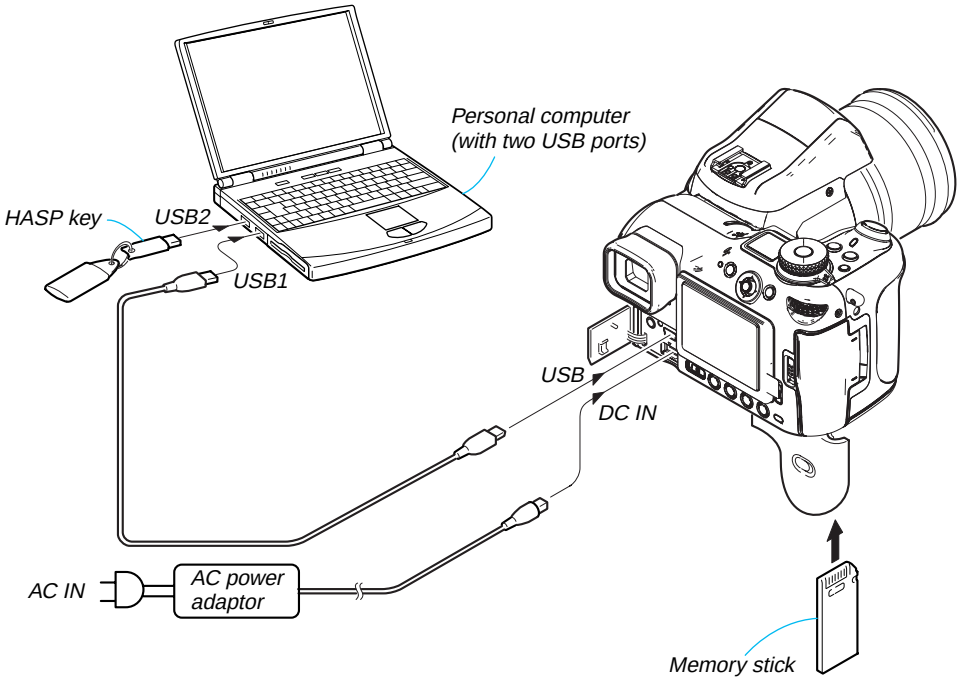


Fig. 6-1-4.

1-1-4. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

Switch settings

1. Mode dial ..... STILL (P AUTO) (**P**)
2. ZOOM ..... WIDE end
3. MS/CF ..... MS (Memory stick)
4. MACRO ( ) ..... ON
5. WHITE BALANCE ..... AUTO
6. EV 0EV
7. FOCUS ..... AUTO
8. USB CONNECT (SET UP setting) ..... NORMAL
9. VIDEO OUT (UP setting) ..... NTSC

2. Order of Adjustments

Basically carry out adjustments in the order given.

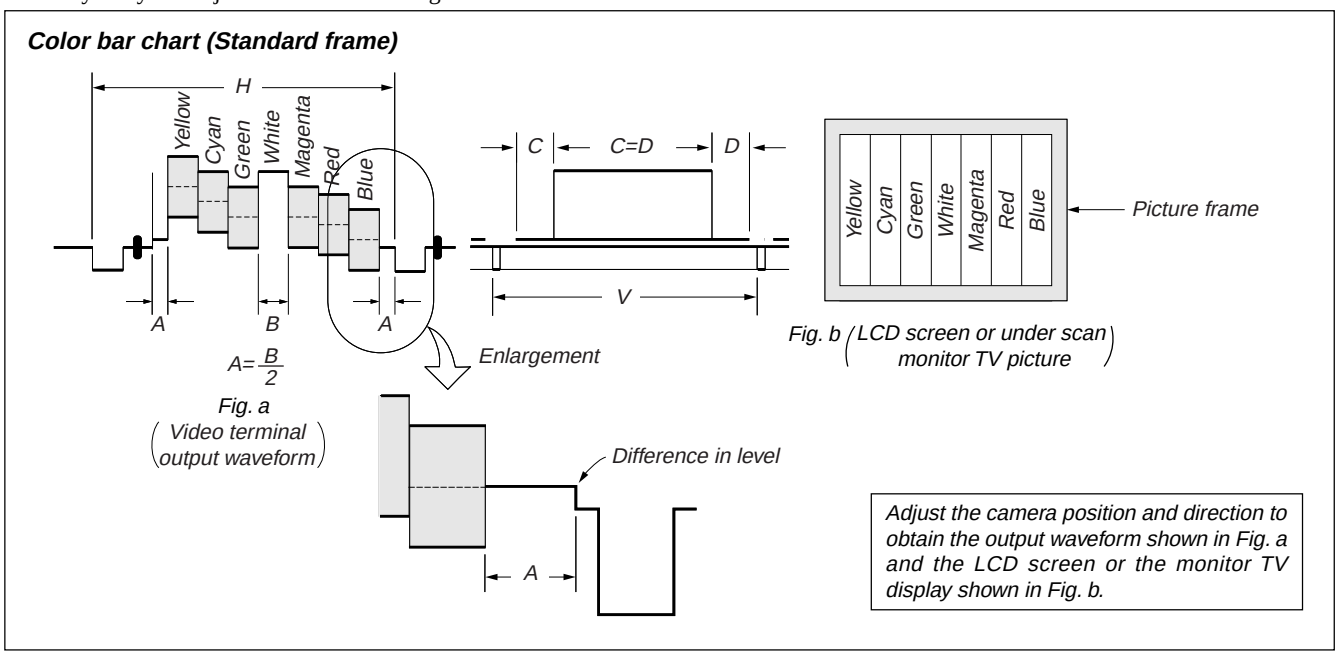


Fig.6-1-5.

3. Subjects

1) Color bar chart (Standard picture frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 6-1-5. (Standard picture frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate strobe adjustment.
If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

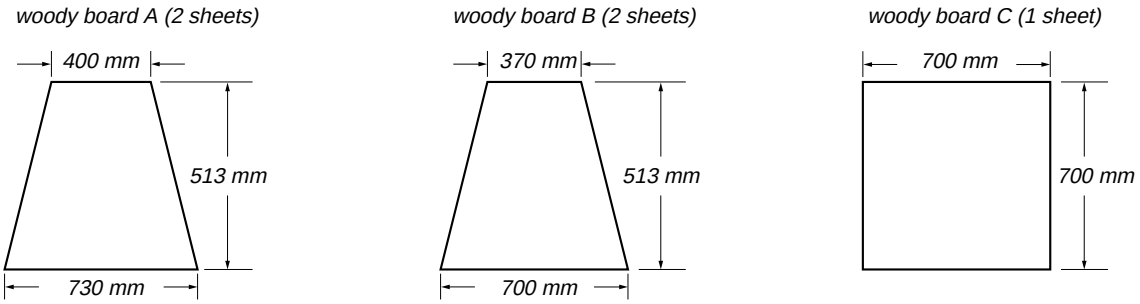


Fig. 6-1-6.

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-7.)

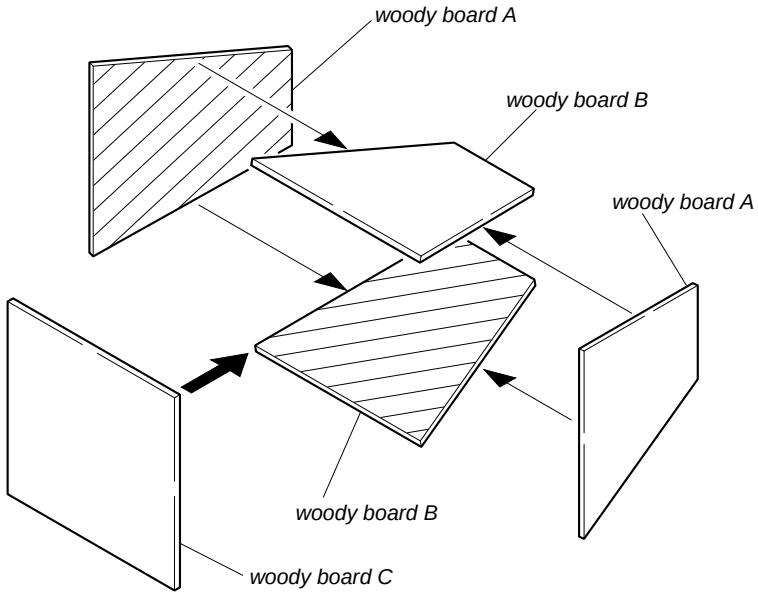


Fig. 6-1-7.

1-2. INITIALIZATION OF DATA

1-2-1. INITIALIZATION OF DATA

1. Initializing All Pages Data

By performing the following procedure, data of all the pages will be initialized.

Initializing Method:

1) Select page: 00, address: 01, and set data: 01.
2) Click [Sector Write] on the SEUS screen to display the SEUS SECTOR WRITE screen.
3) Check that the SET ID is “03”.
4) Click [All] of the ALL SELECT buttons to select all pages. (Fig. 6-1-8. Ⓐ)
5) Click [Write] to write the initializing data to the EEPROM of the camera.
6) Wait for 2 sec.
7) Click [Close] to close the SEUS PAGE EDIT screen.

Modification of 4F, 8E Page Data

If all page data have been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

1) Select page: 00, address: 01, and set data: 01.
2) Click [Page] on the SEUS screen, and input “4F” or “8E”.
3) Click [Address], and input the “Fixed data-2” address.
4) Click [Set], and input the new data.
   Note: New data for changing are not shown in the table because they are different in destination. When changing the data, copy the data built in the same model. If copy the data built in the different model, the camera may not operate.
5) Repeat steps 2 to 4 until all data of the “Fixed data-2” addresses are changed.
6) Click [Save] to write the changed data to the EEPROM of the camera.
7) Wait for 2 sec.

Processing after Completing Initializing of data

Order	Page	Address	Data	Procedure
1	20	00	29	Set the data.
2	20	01	29	Set the data.
3				Check “Receive Paket Error” is displayed on the SEUS screen.
4				Turn on the power of the camera.
5				Click [Connect] on the SEUS screen.

2. Initializing Single Page Data

By performing the following procedure, data of the page that you want to initialize will be initialized.

Initializing Method:

1) Select page: 00, address: 01, and set data: 01.
2) Click [Sector Write] on the SEUS screen to display the SEUS SECTOR WRITE screen.
3) Check that the SET ID is “03”.
4) Click [All] of the option buttons of the target page. (Fig. 6-1-8. Ⓑ)
5) Click [Write] to write the initializing data to the EEPROM of the camera.
6) Wait for 2 sec.
7) Click [Close] to close the SEUS PAGE EDIT screen.

Note: When 4F page or 8E page is initialized, perform “Modification of 4F, 8E Page Data”. (Refer to “1. Initializing All Pages Data”.)

Processing after Completing Initializing of data

Order	Page	Address	Data	Procedure
1	20	00	29	Set the data.
2	20	01	29	Set the data.
3				Check “Receive Paket Error” is displayed on the SEUS screen.
4				Turn on the power of the camera.
5				Click [Connect] on the SEUS screen.

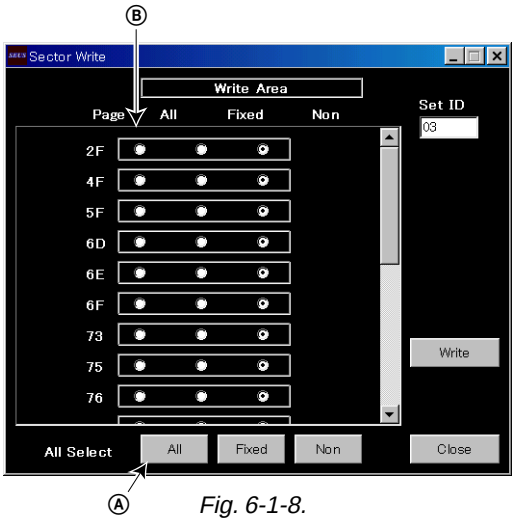


Fig. 6-1-8.

3. 2F Page Adjustment Address

Address	Initial value	Remark
23	80	Test mode

Table. 6-1-2.

4. 4F Page Adjustment Address

Address	Initial value	Remark
46		Fixed data-2
47		Fixed data-2
88		Fixed data-2
94	00	Recording counter
95	00	(Refer to “Record of Use check”
96	00	of “SERVICE MODE”(Page 6-42).)
97	00	
A1		Fixed data-2

Table. 6-1-3.

5. 6E Page Adjustment Address

Address	Initial value	Remark
04	1D	AWB 3200K standard data input
05	00	
06	07	
07	00	
08	1B	
09	00	
0A	08	
0B	00	
0C	1D	
0D	00	
0E	07	
0F	00	
10	1B	
11	00	
12	08	
13	00	
14	1C	
15	00	
16	07	
17	00	
18	1B	
19	00	
1A	08	
1B	00	
1C	00	
1D	00	
1E	00	
1F	00	
20	00	
21	00	
24	0E	AWB 5800K standard data input
25	00	
26	0E	
27	00	
28	0D	
29	00	
2A	0F	
2B	00	
2C	0E	
2D	00	
2E	0E	
2F	00	
30	0D	
31	00	
32	0F	
33	00	
34	0E	
35	00	
36	0E	
37	00	
38	0D	
39	00	
3A	0F	
3B	00	
3C	00	AWB 5800K standard data input
3D	00	
3E	00	
3F	00	
40	00	
41	00	
43	00	AWB 3200K standard data input
45	00	AWB 5800K standard data input
47	00	AWB 3200K standard data input
49	00	AWB 5800K standard data input
72	0C	Strobe adj.
73	00	
74	10	
75	00	
80	10	Linear matrix adj.
81	00	
82	00	
83	00	
84	00	
85	00	
86	00	
87	00	
88	00	
89	00	
8A	10	
8B	00	
8C	00	
8D	00	
8E	00	
8F	00	
90	00	
91	00	
92	00	
93	00	
94	10	
95	00	
96	00	
97	00	
98	00	
99	00	
9A	00	
9B	00	
9C	00	
9D	00	
9E	10	
9F	00	

Table. 6-1-4.

6. 6F Page Adjustment Address

Address	Initial value	Remark
06	40	Color shade check
07	00	
10	40	AF laser output adj.
11	FF	
12	FF	
13	FF	
14	00	
15	3A	
16	FF	
18	00	Flange back adj.
19	00	
1A	00	
1B	00	
1C	17	
1D	80	
1E	00	
1F	00	
20	19	
21	00	
22	00	
23	00	
24	26	
25	26	
26	82	
27	08	
28	03	
29	00	
2A	00	
2B	00	
2C	00	
2D	00	
2E	00	
2F	00	
30	00	
31	00	
32	00	
33	00	
34	00	
35	00	
36	00	
37	00	
38	00	
39	00	
3A	00	
3B	00	
3C	00	
3D	00	
3E	FF	
40	40	Flange back adj.
41	41	
42	42	
43	43	
44	44	
45	45	
46	46	Flange back adj.
47	47	
48	48	
49	49	
4A	4A	
4B	4B	
4C	4C	
4D	4D	
4E	4E	
4F	4F	
50	50	
51	51	
52	00	
53	00	
54	00	Auto focus illumination adj
5E	E0	IRIS reset sensor adj.
5F	80	
60	00	F No. compensation
61	00	
62	00	
63	00	
64	00	
65	30	Light value adj.
66	FE	
67	6D	
6B	FF	F No. compensation/
6C	00	Mechanical shutter adj.
6D	00	
B8	09	Mechanical shutter adj.
B9	AC	
BA	09	
BB	B4	
BC	09	
BD	BD	
BE	09	
BF	A2	
C0	09	
C1	C3	
C2	00	
C3	00	
C4	00	
C5	00	
C6	00	
C7	37	
C8	2E	
C9	21	
CA	15	
CB	15	
CC	80	
CD	88	
CE	98	
CF	90	
D0	88	
D1	00	
D2	00	

6F page

Address	Initial value	Remark
D3	00	Mechanical shutter adj.
D4	00	
D5	00	
D6	00	
D7	14	
D8	FF	Strobe adj.
D9	FF	
DA	FF	
DB	00	
DC	00	
DD	00	
DE	00	
DF	00	
E0	00	
E1	00	
E2	00	
E3	00	
E4	00	
E5	00	
E6	00	
E7	00	
E8	00	
E9	00	
EA	00	
EB	00	
EC	00	
ED	00	
EE	00	
EF	00	

Table. 6-1-5.

7. 8E Page Adjustment Address

Address	Initial value	Remark
C8		Fixed data-2

Table. 6-1-6.

8. 8F Page Adjustment Address

Address	Initial value	Remark
23	80	VCO adj. (LCD)
24	76	V COM adj. (LCD)
28	90	White balance adj. (LCD)
2A	80	
2C	72	Contrast adj. (LCD)
73	80	VCO adj. (EVF)
74	A4	V COM adj. (EVF)
75	8D	Bright adj. (EVF)
78	90	White balance adj. (EVF)
7A	80	
7C	38	Contrast adj. (EVF)
D0	80	Video output level adj.

Table. 6-1-7.

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Output Level Adjustment (SY-096 board)

Adjust the sync level of the composite video signal output.

Mode	PLAY (▶)
Signal	No signal
Measurement Point	Video terminal of AV OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	8F
Adjustment Address	D0
Specified Value	Sync level: A=286 ± 5mV (NTSC mode) A=300 ± 5mV (PAL mode) Burst level: B=286 ± 30mV (NTSC mode) B=300 ± 30mV (PAL mode)

Switch setting:

VIDEO OUT (SETUP 2)..... (NTSC mode)
..... (PAL mode)

Adjusting method:

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	60	C1		Read the data, and check it is “01”.
3	80	70	01	Set the data.
4	8F	D0		Change the data and set the sync level (A) to the specified value.
5				Check that the burst level (B) satisfies the specified value.
6	80	70	00	Write the data.
7				Save the data.
8				Wait for 2 sec.
9	00	01	00	Set the data.

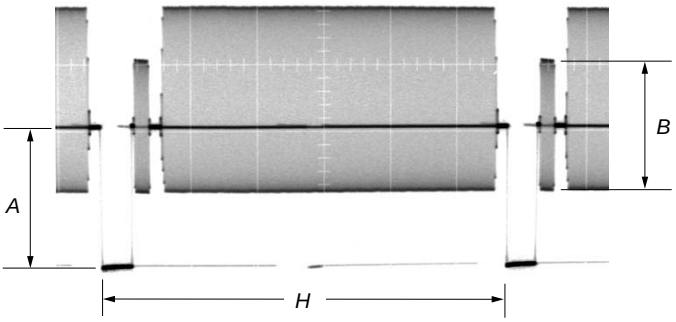


Fig. 6-1-9.

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

1. Data Setting during Camera System Adjustments

Perform the following data setting before the camera system adjustments.

Note: When the power is turned off, some data settings will be released. So perform this data setting again when the power is turned off.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	4F	B7	01	Set the data.
3	2F	23	11	Set the data.
4	60	C1		Read the data, and check it is "02".
5	80	70	01	Set the data.
6	60	6C	01	Set the data.
7	60	2C	01	Set the data.

After completing the camera system adjustments, release the data setting.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	4F	B7	00	Set the data.
3	2F	23	80	Set the data.
4				Save the data.
5				Wait for 2 sec.
6	00	01	00	Set the data.

2. IRIS Reset Sensor Adjustment

Measuring the iris reset sensor output voltage, and compensate the dispersion of the reset position detecting voltage.

Mode	STILL (P AUTO) (**P**)
Subject	Clear chart
Measurement Point	Data of page 6F, address: 5E, 5F, 6B
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	5E, 5F
Specified Value1	00
Specified Value2	80 to FF
Specified Value3	7F to 81

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the ZOOM is WIDE end.
3	60	01	6F	Set the data.
4				Wait for 2 sec.
5	60	02		Read the data, and check it is "01". (Note2)
6	6F	6B		Read the data, and check it satisfies the specified value 1.
7	6F	5E		Read the data, and check it satisfies the specified value 2.
8	6F	5F		Read the data, and check it satisfies the specified value 3.

Note2: The adjustment data will be automatically input to page: 6F, address: 5E, 5F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				Perform "Flange Back Adjustment".
3				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

3. Flange Back Adjustment

To adjust the flange back, compensate the dispersion of the zoom position A/D value at WIDE end and TELE end.

Mode	STILL (P AUTO) (**P**)
Subject	Arbitrary
Measurement Point	Data of page: 6F, address: 24, 25, 3E
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	18 to 3E, 40 to 53
Specified value1	00
Specified value2	0A to 40

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	00	37	Set the data.
3	60	01	37	Set the data.
4				Wait for 2 sec.
5	60	02		Read the data, and check it is "01".
6	60	00	00	Set the data.
7	60	01	00	Set the data.
8				Set the ZOOM to the WIDE end.
9	60	01	13	Set the data.
10				Wait for 1 sec.
11	60	01	B1	Set the data.
12				Wait for 1 sec.
13	60	02		Read the data, and check it is "01". (Note2)
14				Set the ZOOM to the TELE end.
15	60	01	13	Set the data.
16				Wait for 1 sec.
17	60	01	B3	Set the data.
18				Wait for 1 sec.
19	60	02		Read the data, and check it is "01". (Note2)
20	60	01	00	Set the data.
21	6F	3E		Read the data, and check it satisfies the specified value 1.
22	6F	24		Read the data, and check it satisfies the specified value 2.
23	6F	25		Read the data, and check it satisfies the specified value 2.

Note2: The adjustment data will be automatically input to page: 6F, address: 18 to 3E, 40 to 53

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1				Perform "Flange Back Check".
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

4. Flange Back Check

Mode	STILL (P AUTO) (**P**)
Subject	Siemens star (1.0m from the front of the lens) (Luminance : 200 to 400 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value1	The lens is focused.
Specified Value2	Below 8% of diagonal length of the TV monitor (Note)

Note: Below 40mm when a 21 inches TV monitor is used.

Checking method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Place the siemens star 1.0m from the front of the lens.
3	60	2C	00	Set the data.
4	60	8C	30	Set the data.
5				Shoot the Siemens star with the zoom TELE end (200).
6				Check that center of the Siemens star is located in the center of the TV monitor screen.
7				Check that the lens is focused.
8	60	2C	01	Set the data.
9				For each of the zoom positions 135, 100, 70, 50 and 35, check that the lens is focused.
10				Shoot the Siemens star with the zoom WIDE end (28).
11				Check that the lens is focused.
12				Check that distance between the center of the Siemens star and the center of the TV monitor screen satisfies the specified value2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	8C	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

5. Picture Frame Setting

Mode	STILL (P AUTO) (**P**)
Subject	Color bar chart and clear chart (Standard picture frame) About 20cm from the front of the lens
Measurement Point	Video terminal of A/V OUT jack
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=C=B/2, E=F

Switch setting:

ZOOM ..... WIDE end

Setting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Shoot the color bar chart with the zoom WIDE end.
3				Adjust the direction and distance between the pattern box and camera, and set the picture frame to the specified position.
4				Adjust the focus.
5				Remove the color bar chart and set the clear chart.
6				Check that the whole of the screen is white. If not, adjust the direction and distance slightly.
7	10	44		Read the data, and this data named YH.
8	10	45		Read the data, and this data named YL.
9				Perform the following adjustments.

How to reset the focus when it deviated:

If the focus deviated due to some reason reset it in the following method.

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	90	00	Set the data.
3	60	91	00	Set the data.
4	60	92	YL	Set the data. (Note)
5	60	93	YH	Set the data. (Note)
6	60	01	79	Set the data.
7				Wait until the movement of the lens stops.
8	60	07		Read the data, and check it is "01".
9	60	01	00	Set the data.

Note: YH and YL are the data read in the "Setting method".

Check on an oscilloscope

1. Horizontal period

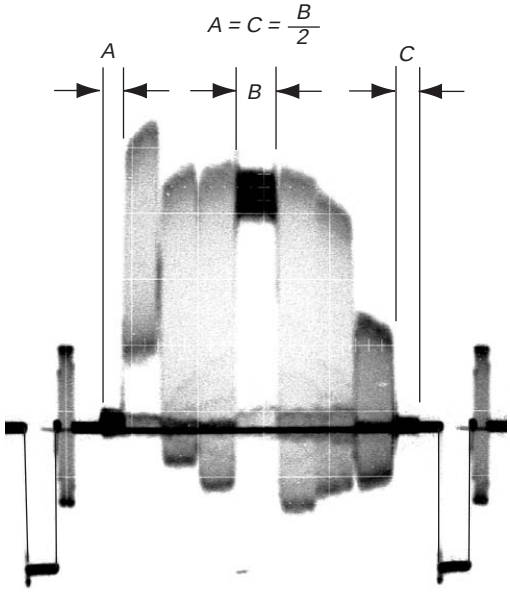


Fig. 6-1-10.

2. Vertical period

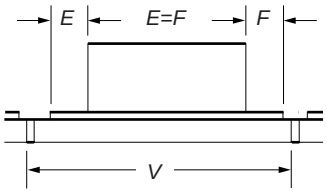


Fig. 6-1-11.

Check on the monitor TV (Underscanned mode)

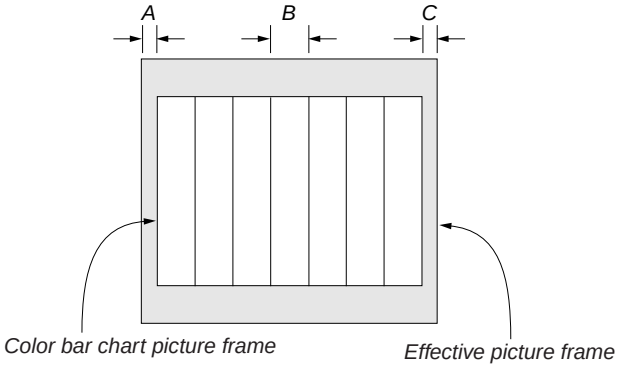


Fig. 6-1-12.

6. Color Shade Check

Data contents will be released in Supplement.

7. F No. Compensation

Adjusted the dispersion of the iris to every to every F number, and compensate the exposure.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 6F, address: 6B
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	60 to 64, 6B to 6D
Specified value	00

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	01	BB	Set the data.
4				Wait for 20 sec.
5	60	02		Read the data, and check it is "01". (Note2)
6	6F	6B		Read the data, and check it satisfies the specified value.

Note2: The adjustment data will be automatically input to page: 6F, address: 60 to 64, 6B to 6D.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

8. Mechanical Shutter Adjustment

Adjust the dispersion of the opening/closing time and the closing loss rate of the mechanical shutter. and compensate the exposure.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 6F, address: 6B
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	6B to 6D, B8 to D7
Specified value	00

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	01	AD	Set the data.
4				Wait until the movement of the shutter stops.
5	60	02		Read the data, and check it is "01". (Note2)
6	6F	6B		Read the data, and check it satisfies the specified value.

Note2: The adjustment data will be automatically input to page: 6F, address: 6B to 6D, B8 to D7.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

9. Light Value Adjustment

Adjust the standard LV value.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 10, address: 0C, 0D
Measuring Instrument	Data of page: 6F, address: 65
Adjustment Page	6F
Adjustment Address	65 to 67
Specified value1	0FE0 to 1020
Specified value2	30 to 50

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	01	0D	Set the data.
4				Wait for 2 sec.
5	60	02		Read the data, and check it is "01". (Note2)
6	10	0C		Read the data, and this data is named D_{0C}.
7	10	0D		Read the data, and this data is named D_{0D}.
8				Calculate D_{LV} using the following equation (Hexadecimal calculation) $D_{LV} = D_{0C} \times 100 + D_{0D}$
10				Check that D_{LV} satisfies the specified value1.
11	6F	65		Read the data, and check it satisfies the specified value2.

Note2: The adjustment data will be automatically input to page: 6F, address: 65 to 67.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

10. Linear Matrix Adjustment

Data contents will be released in Supplement.

11. Auto White Balance 3200K Standard Data Input

Data contents will be released in Supplement.

12. Auto White Balance 5800K Standard Data Input

Data contents will be released in Supplement.

13. Auto White Balance 5800K Check

Data contents will be released in Supplement.

14. Auto White Balance 3200K Check

Data contents will be released in Supplement.

15. Color Reproduction Check (CAP-Normal mode)

Adjust the color reproduction of yellow, red, blue and cyan so that proper color reproduction is produced.

Mode	STILL (P AUTO) (**P**)
Subject	Color bar chart (Standard picture frame)
Measurement Point	Video terminal of A/V OUT jack
Measuring Instrument	NTSC vectorscope
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Note: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end
VIDEO OUT (SET UP setting) ..... NTSC

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	7A	18		Read the data, and memorize it.
4	7A	18	00	Set the data.
5	60	37	39	Set the data.
6	60	01	AB	Set the data.
7				Wait for 1 sec.
8				Adjust the GAIN and PHASE of the vectorscope so that the burst luminance point is set at the specified position.
9				Check that each center of all color luminance points is set in each color reproduction frame.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	7A	18		Set the data memorized at "Adjusting method".
3				Wait for 1 sec.
4	60	37		Read the data, and check it is "00".
5				Perform "Color Reproduction Check". If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

For CAP-Normal mode

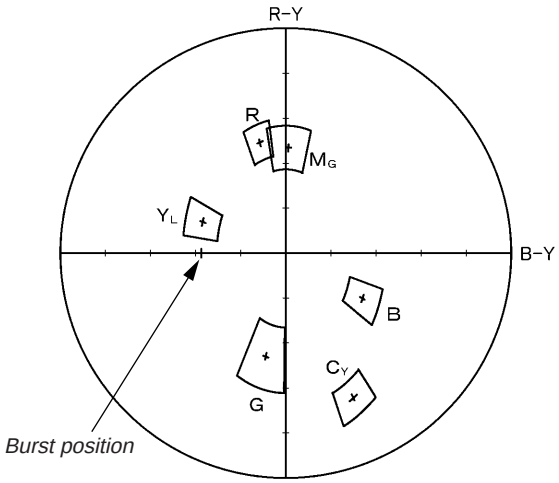


Fig. 6-1-13.

16. Color Reproduction Check (CAP-Real mode)

Adjust the color reproduction of yellow, red, blue and cyan so that proper color reproduction is produced.

Mode	STILL(P AUTO) (**P**)
Subject	Color bar chart (Standard picture frame)
Measurement Point	Video terminal of A/V OUT jack
Measuring Instrument	NTSC vectorscope
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Note: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end
VIDEO OUT (SET UP setting) ..... NTSC

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	57	01	Set the data.
4	7A	24		Read the data, and memorize it.
5	7A	24	00	Set the data.
6	60	37	39	Set the data.
7	60	01	AB	Set the data.
8				Wait for 1 sec.
9				Adjust the GAIN and PHASE of the vectorscope so that the burst luminance point is set at the specified position.
10				Check that each center of all color luminance points is set in each color reproduction frame.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	7A	24		Set the data memorized at "Adjusting method".
3	60	57	00	Set the data.
4				Wait for 1 sec.
5	60	37		Read the data, and check it is "00".
6				Perform the next adjustment. If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

For CAP-Normal mode

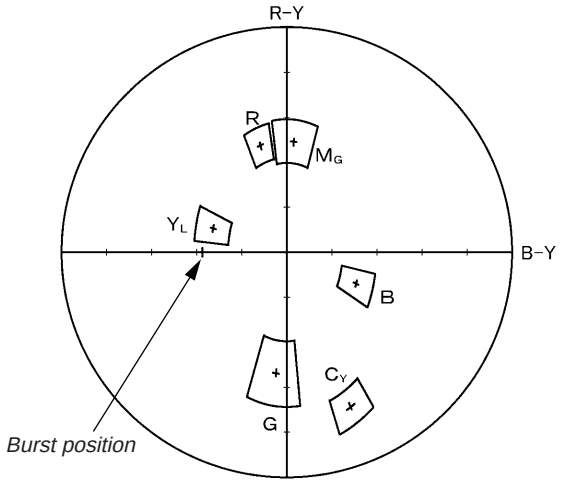


Fig. 6-1-14.

17. CCD Linearity Check

Data picking is done to keep output linearity of the CCD imager, even if the input level of CCD imager changes.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 10, address: 80, 81, 82, 83
Measuring Instrument	
Specified value1	97 to 103 (Note1)
Specified value2	94 to 106 (Note1)
Specified value3	92 to 108 (Note1)

Note1: Decimal number.
Note2: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.
Note3: For the bit values, refer to "6-4. SERVICE MODE", "2-2. 2. Bit value discrimination".

Switch setting:

ZOOM ..... WIDE end

Preparation:

Order	Page	Address	Data	Procedure
1				Install the clear chart.
2				Check that "1. Data Setting during Camera System Adjustments" is performed.
3				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
4	75	09		Read the data, and memorize it.
5	75	09	04	Set the data.
6	77	F6		Read the data, and memorize it.
7	77	F6		Set Bit2 of the data to "0". (Note3)
8	77	F7		Read the data, and memorize it.
9	77	F7		Set Bit6 of the data to "1". (Note3)
10	77	F2		Read the data, and memorize it.
11	77	F2		Set Bit6 of the data to "0". (Note3)
12	77	F2		Set Bit0 of the data to "0". (Note3)
13	77	72		Read the data, and memorize it.
14	60	14	90	Set the data.
15	60	12	9F	Set the data.
16	75	17		Read the data, and memorize it.
17	75	17	AA	Set the data.
18	75	18		Read the data, and memorize it.
19	75	18	00	Set the data.
20	75	19		Read the data, and memorize it.
21	75	19	E8	Set the data.
22	75	1A		Read the data, and memorize it.
23	75	1A	54	Set the data.
24	75	1B		Read the data, and memorize it.
25	75	1B	74	Set the data.
26				Wait for 2 sec.

Checking method:

Order	Page	Address	Data	Procedure
1				Perform "Preparation" before this adjustment.
2	60	01	F9	Set the data.
3				Wait for 2 sec.
4	60	E1		Read the data, and check it is "08".
5	10	80		Read the data, and this data is named D_{80}.
6	10	81		Read the data, and this data is named D_{81}.
7				Calculate D_{RG0} using the following equation (Hexadecimal calculation) $D_{RG0} = D_{80} \times 100 + D_{81}$
8	10	82		Read the data, and this data is named D_{82}.
9	10	83		Read the data, and this data is named D_{83}.
10				Calculate D_{BG0} using the following equation (Hexadecimal calculation) $D_{BG0} = D_{82} \times 100 + D_{83}$
11	60	01	00	Set the data.
12	60	E1	00	Set the data.
13	77	72	70	Set the data.
14				Wait for 2 sec.
15	60	01	F9	Set the data.
16				Wait for 2 sec.
17	60	E1		Read the data, and check it is "08".
18	10	80		Read the data, and this data is named D_{80}.
19	10	81		Read the data, and this data is named D_{81}.
20				Calculate D_{RG1} using the following equation (Hexadecimal calculation) $D_{RG1} = D_{80} \times 100 + D_{81}$
21	10	82		Read the data, and this data is named D_{82}.
22	10	83		Read the data, and this data is named D_{83}.
23				Calculate D_{BG1} using the following equation (Hexadecimal calculation) $D_{BG1} = D_{82} \times 100 + D_{83}$
24	60	01	00	Set the data.
25	60	E1	00	Set the data.
26	60	12	A2	Set the data.
27	77	72	48	Set the data.
28				Wait for 2 sec.
29	60	01	F9	Set the data.
30				Wait for 2 sec.
31	60	E1		Read the data, and check it is "08".
32	10	80		Read the data, and this data is named D_{80}.
33	10	81		Read the data, and this data is named D_{81}.

Order	Page	Address	Data	Procedure
34				Calculate D_{RG2} using the following equation (Hexadecimal calculation) $D_{RG2} = D_{80} \times 100 + D_{81}$
35	10	82		Read the data, and this data is named D_{82}.
36	10	83		Read the data, and this data is named D_{83}.
37				Calculate D_{BG2} using the following equation (Hexadecimal calculation) $D_{BG2} = D_{82} \times 100 + D_{83}$
38	60	01	00	Set the data.
39	60	E1	00	Set the data.
40	77	72	0C	Set the data.
41				Wait for 2 sec.
42	60	01	F9	Set the data.
43				Wait for 2 sec.
44	60	E1		Read the data, and check it is “08”.
45	10	80		Read the data, and this data is named D_{80}.
46	10	81		Read the data, and this data is named D_{81}.
47				Calculate D_{RG3} using the following equation (Hexadecimal calculation) $D_{RG3} = D_{80} \times 100 + D_{81}$
48	10	82		Read the data, and this data is named D_{82}.
49	10	83		Read the data, and this data is named D_{83}.
50				Calculate D_{BG3} using the following equation (Hexadecimal calculation) $D_{BG3} = D_{82} \times 100 + D_{83}$
51	60	01	00	Set the data.
52	60	E1	00	Set the data.
53	77	72	06	Set the data.
54				Wait for 2 sec.
55	60	01	F9	Set the data.
56				Wait for 2 sec.
57	60	E1		Read the data, and check it is “08”.
58	10	80		Read the data, and this data is named D_{80}.
59	10	81		Read the data, and this data is named D_{81}.
60				Calculate D_{RG4} using the following equation (Hexadecimal calculation) $D_{RG4} = D_{80} \times 100 + D_{81}$
61	10	82		Read the data, and this data is named D_{82}.
62	10	83		Read the data, and this data is named D_{83}.
63				Calculate D_{BG4} using the following equation (Hexadecimal calculation) $D_{BG4} = D_{82} \times 100 + D_{83}$
64				Convert D_{RG0}, D_{BG0}, D_{RG1}, D_{BG1}, D_{RG2}, D_{BG2}, D_{RG3}, D_{BG3}, D_{RG4} and D_{BG4} to decimal number, and obtain D_{RG0}', D_{BG0}', D_{RG1}', D_{BG1}', D_{RG2}', D_{BG2}', D_{RG3}', D_{BG3}', D_{RG4}' and D_{BG4}'.
65				Calculate R/G ratio (1), B/G ratio (1), R/G ratio (2), B/G ratio (2), R/G ratio (3), B/G ratio (3), R/G ratio (4) and B/G ratio (4), using the following equations (Decimal calculation) R/G ratio (1) = (D_{RG1}'/D_{RG0}') × 100 B/G ratio (1) = (D_{BG1}'/D_{BG0}') × 100 R/G ratio (2) = (D_{RG2}'/D_{RG0}') × 100 B/G ratio (2) = (D_{BG2}'/D_{BG0}') × 100 R/G ratio (3) = (D_{RG3}'/D_{RG0}') × 100 B/G ratio (3) = (D_{BG3}'/D_{BG0}') × 100 R/G ratio (4) = (D_{RG4}'/D_{RG0}') × 100 B/G ratio (4) = (D_{BG4}'/D_{BG0}') × 100
				Linearity check of very high luminance
66				Check that R/G ratio (1) satisfies the specified value 1. (Decimal number)
67				Check that B/G ratio (1) satisfies the specified value 1. (Decimal number)
				Linearity check of high luminance
68				Check that R/G ratio (2) satisfies the specified value 1. (Decimal number)
69				Check that B/G ratio (2) satisfies the specified value 1. (Decimal number)
				Linearity check of low luminance
70				Check that R/G ratio (3) satisfies the specified value 2. (Decimal number)
71				Check that B/G ratio (3) satisfies the specified value 2. (Decimal number)
				Linearity check of very low luminance
72				Check that R/G ratio (4) satisfies the specified value 3. (Decimal number)
73				Check that B/G ratio (4) satisfies the specified value 3. (Decimal number)

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	60	E1	00	Set the data.
3	60	12	00	Set the data.
4	60	14	00	Set the data.
5	75	09		Set the data memorized at “Preparation”.
6	77	F6		Set the data memorized at “Preparation”.
7	77	F7		Set the data memorized at “Preparation”.
8	77	F2		Set the data memorized at “Preparation”.
9	77	72		Set the data memorized at “Preparation”.
10	75	17		Set the data memorized at “Preparation”.
11	75	18		Set the data memorized at “Preparation”.
12	75	19		Set the data memorized at “Preparation”.
13	75	1A		Set the data memorized at “Preparation”.
14	75	1B		Set the data memorized at “Preparation”.
15				Save the data.
16				Wait for 2 sec.
17				Perform next adjustments. If finish the camera system adjustments, release the data setting. (See “1. Data Setting during Camera System Adjustments”.)

18. CCD White Defect Compensation Check

The positions of the white defective pixel are detected, and check that the pixels can be corrected.

Mode	STILL (P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 60, address: 55
Measuring Instrument	
Specified value 1	00 to 7F
Specified value 2	00

Note: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	7D	64		Read the data, and memorize the data.
4	7D	64	1E	Set the data.
5	7D	69		Read the data, and memorize the data.
6	7D	69	18	Set the data.
7	60	01	8B	Set the data.
8				Wait for about 20 sec.
9	60	02		Read the data, and check it is "01".
10	60	55		Read the data, and check it satisfies the specified value 1.
11	60	01	00	Set the data.
12				Wait for 1 sec.
13	7D	64	0F	Set the data.
14	7D	69	60	Set the data.
15	60	01	87	Set the data.
16				Wait for about 20 sec.
17	60	02		Read the data, and check it is "01".
18	60	55		Read the data, and check it satisfies the specified value 2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	7D	64		Set the data memorized at "Adjusting method".
3	7D	69		Set the data memorized at "Adjusting method".
4				Perform next adjustments. If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

19. CCD Black Defect Compensation Check

The positions of the black defective pixel are detected, and check that the pixels can be corrected. And confirms that there is no trash in the surface of the CCD imager, the optical filter and the inside of the lens.

Mode	STILL (P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 60, address: 55
Measuring Instrument	
Specified value 1	00 to 30
Specified value 2	00

Note1: Check that there are no dust, no dirt and no reflection on the clear chart.

Note2: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and Set data: 00.

Switch setting:

ZOOM ..... 70 (mm)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	7D	65	4C	Set the data.
4	60	2C	01	Set the data.
5				Rotate ZOOM ring and set the ZOOM to "70" position.
6	60	92	00	Set the data.
7	60	93	00	Set the data.
8	60	01	79	Set the data.
9	60	30	08	Set the data.
10				Wait for 1 sec.
11	60	07		Read the data, and check it is "01".
12				Check that the whole of the screen is white.
13	60	01	8D	Set the data.
14				Wait for about 35 sec.
15	60	02		Read the data, and check it is "01".
16	60	55		Read the data, and check it satisfies the specified value 1. If the data is "00", proceed to "Processing after Completing Adjustments"
17	60	01	00	Set the data.
18				Wait for 1 sec.
19	7D	65	5A	Set the data.
20	60	01	89	Set the data.
21				Wait for about 35 sec.
22	60	02		Read the data, and check it is "01".
23	60	55		Read the data, and check it satisfies the specified value 2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	60	2C	00	Set the data.
3	60	30	00	Set the data.
4	7D	65	4C	Set the data.
5				Set the ZOOM to WIDE end.
6				Perform next adjustments. If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

20. Strobe Adjustment

Adjust the light level and white balance when the strobe light flashes.

Mode	STILL (P AUTO) (**P**)	
Subject	Background paper (J-2501-130-A) (50cm from the front of the lens)	
Measurement Point	Data of page 6F, address: EA, EC, EE	
Measuring Instrument	Data of page 6E, address: 4F	
Adjustment Page	6F	6E
Adjustment Address	D8 to EF	72 to 75
Specified Value1	03 to 0A	
Specified Value2	00	

Note1: Perform this adjustment in the dark room or use the flash adjustment box.
Note2: Any light other than the strobe light should not light up the plate.
Note3: After the power is turned on, this adjustment can be done only once.
Note4: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end
FLASH ..... OPEN

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	2C	01	Set the data.
3	60	92	FF	Set the data.
4	60	93	FF	Set the data.
5	60	6C	01	Set the data.
6	60	01	79	Set the data.
7				Wait for 5 sec.
8	60	07		Read the data, and check it is "01".
9	60	01	67	Set the data.
10				Check the flashing.
11	60	02		Read the data, and check it is "01". (Note5)
12	6F	D8		Read the data, and check it is "00".
13	6F	E8		Read the data, and check it satisfies the specified value 1.
14	60	01	00	Set the data.
15				Wait for 5 sec.
16	60	ED		Read the data, and check it is "02".
17	60	01	67	Set the data.
18				Check the flashing.
19	60	02		Read the data, and check it is "01". (Note5)
20	6F	D8		Read the data, and check it is "00".
21	60	01	00	Set the data.
22				Wait for 5 sec.
23	60	ED		Read the data, and check it is "02".
24	60	01	67	Set the data.
25				Check the flashing.
26	60	02		Read the data, and check it is "01". (Note5)
27	6F	D8		Read the data, and check it is "00".
28	60	01	00	Set the data.
29				Wait for 5 sec.
30	60	ED		Read the data, and check it is "02".
31	60	01	67	Set the data.
32				Check the flashing.
33	60	02		Read the data, and check it is "01". (Note5)
34	6F	D8		Read the data, and check it is "00".
35	60	01	00	Set the data.
36				Wait for 5 sec.
37	60	ED		Read the data, and check it is "02".
38	6E	4F	FF	Set the data.
39	60	01	B9	Set the data.
40				Check the flashing.
41	60	02		Read the data, and check it is "01". (Note5)
42	6F	D8		Read the data, and check it is "00".
43	60	01	00	Set the data.
44				Wait for 5 sec.
45	60	ED		Read the data, and check it is "02".
46	60	01	E7	Set the data.
47				Check the flashing.
48	60	02		Read the data, and check it is "01".
49	6F	D8		Read the data, and check it is "00".
50	6F	EA		Read the data, and check it satisfies the specified value 1.
51	6F	EC		Read the data, and check it satisfies the specified value 1.
52	6F	EE		Read the data, and check it satisfies the specified value 1.
53	6E	4F		Read the data, and check it satisfies the specified value 2.

Note5: The adjustment data will be automatically input to page: 6F, address: B, D8 to EF, and to page: 6E, address: 72 to 75.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	60	2C	00	Set the data.
3	60	6C	00	Set the data.
4	60	92	00	Set the data.
5	60	93	00	Set the data.
6				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

21. AF Laser Output Adjustment

Adjust the AF laser output power.

Mode	STILL (P AUTO) (**P**)
Subject	Background paper (J-2501-130-A). (50cm from the front of the lens)
Measurement Point	Data of page 6F, address: 13
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	10 to 16
Specified Value	00

Note1: Perform this adjustment in the dark room or use the flash adjustment box.
Note2: Any light other than the strobe light should not light up the plate.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	6F	10	30	Set the data.
3	6F	15	55	Set the data.
4	60	01	AF	Write the data.
5				Check that the AF laser is lit.
6				Wait for 8 sec.
7	60	02		Read the data, and check it is "01". (Note3)
8	6F	13		Read the data, and check it satisfies the specified value 1.

Note3: The adjustment data will be automatically input to page: 6F, address: 10 to 16.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Write the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

22. AF Laser Axis Check

Check the AF laser optical axis.

Mode	STILL(P AUTO) (**P**)
Subject	Background paper (J-2501-130-A) (1m from the front of the lens)
Measurement Point	Monitor TV (under scan)
Measuring Instrument	
Specified Value	All hologram patterns are within the inspection frame.

Note1: Perform this adjustment in the dark room.

Preparations:

1) Take a copy of the AF Laser axis frame with a clear sheet. (Reduce or enlarge the frame in same size as the effective picture frame of the monitor TV.)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	30	06	Set the data.
3	60	2C	01	Set the data.
4				Set the ZOOM to WIDE end.
5	60	92	00	Set the data.
6	60	93	40	Set the data.
7	60	01	79	Write the data.
8				Wait for 3 sec.
9	60	07		Read the data, and check it is "01".
10	60	01	00	Write the data.
11	60	22	05	Set the data.
12	60	23	0A	Set the data.
13				Check that all hologram patterns are within the inspection frame. (Fig. 6-1-15.)
14				Set the ZOOM to TELE end.
15	60	92	00	Set the data.
16	60	93	40	Set the data.
17	60	01	79	Write the data.
18				Wait for 3 sec.
19	60	07		Read the data, and check it is "01".
20	60	14	8A	Set the data.
21	60	01	00	Write the data.
22				Check that all hologram patterns are not unfocused.

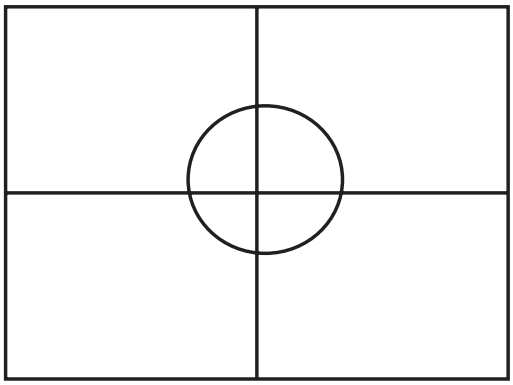


Fig. 6-1-15.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	14	00	Set the data.
2	60	22	00	Set the data.
3	60	23	00	Set the data.
4	60	2C	00	Set the data.
5	60	30	00	Set the data.
6	60	92	00	Set the data.
7	60	93	00	Set the data.
8				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

1-5. COLOR ELECTRONIC VIEWFINDER ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: If you perform the adjustments with FINDER/LCD switch (Control switch block (UNDER)) removed, set the following data.
1) Select page: 80, address: 10, and set data: 1A.
2) Select page: 80, address: 11, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 80, address: 10, and set data: FF.
2) Select page: 80, address: 11, and set data: 00.

Switch setting:

FINDER/LCD ..... FINDER

1. Data Setting during EVF System Adjustments

Perform the following data setting before the EVF system adjustments.

Note: When the power is turned off, some data settings will be released. So perform this data setting again when the power is turned off.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	80	70	01	Set the data.

After completing the EVF system adjustments, release the data setting.

Order	Page	Address	Data	Procedure
1	80	70	00	Set the data.
2				Save the data.
3				Wait for 2 sec.
4	00	01	00	Set the data.

2. EVF Initial Data Input

Mode	PLAY (▶)
Signal	Arbitrary
Adjustment Page	8F
Adjustment Address	70, 71, 73 to 78, 7A, 7C

Adjusting method:

1) Select page: 00, address: 01, and set data: 01.
2) Select page: 8F, and set the data in the following table.
3) Save the data.
4) Wait for 2sec.
5) Select page: 00, address: 01, and set data: 00.

Address	Data	Remark
70	53	Fixed data
71	96	Fixed data
73	80	VCO adj.
74	A4	V COM adj.
75	8D	Bright adj.
76	40	Fixed data
77	00	Fixed data
78	90	White balance adj.
7A	80	White balance adj.
7C	38	Contrast adj.

3. VCO Adjustment (SY-096 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	73
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	84	2F	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	01	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

4. Bright Adjustment (SY-096 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	75
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	88	9F	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	03	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

5. Contrast Adjustment (SY-096 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	7C
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	89	44	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	05	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

6. V COM Adjustment (SY-096 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	74
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	8C	03	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	07	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

7. White Balance Adjustment (SY-096 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	78, 7A
Specified Value	The EVF screen should not be colored.

Note1: Use the AC power adaptor during this adjustment.
Note2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC902

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	80	71	52	Set the data.
3	80	89	02	Set the data.
4	8F	78	90	Set the data.
5	8F	7A	80	Set the data.
6	8F	78		Check that the LCD screen is not colored. If not colored, proceed to step 10.
7	8F	78		Change the data so that the LCD screen is not colored.
8	8F	7A		Change the data so that the LCD screen is not colored.
9	8F	7A		If the LCD screen is colored, repeat steps 7 to 9.
10	80	71	FF	Set the data.
11				Save the data.
12				Wait for 2 sec.
13				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

1-6. LCD SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: If you perform the adjustments with FINDER/LCD switch (Control switch block (UNDER)) removed, set the following data.
1) Select page: 80, address: 10, and set data: 1A.
2) Select page: 80, address: 11, and set data: 00.
Reset the data after completing adjustment.
1) Select page: 80, address: 10, and set data: FF.
2) Select page: 80, address: 11, and set data: 00.

Switch setting:

FINDER/LCD ..... LCD

1. Data Setting during LCD System Adjustments

Perform the following data setting before the LCD system adjustments.

Note1: When the power is turned off, some data settings will be released. So perform this data setting again when the power is turned off.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	80	70	01	Set the data.

After completing the LCD system adjustments, release the data setting.

Order	Page	Address	Data	Procedure
1	80	70	00	Set the data.
2				Save the data.
3				Wait for 2 sec.
4	00	01	00	Set the data.

2. LCD Initial Data Input

Mode	PLAY (▶)
Signal	Arbitrary
Adjustment Page	8F
Adjustment Address	20, 21, 23 to 28, 2A, 2C

Adjusting method:

1) Select page: 00, address: 01, and set data: 01.
2) Select page: 8F, and write the data in the following table.
3) Save the data.
4) Wait for 2sec.
5) Select page: 00, address: 01, and set data: 00.

Address	Data	Remark
20	A5	Fixed data
21	19	Fixed data
23	80	VCO adj.
24	76	VCOM adj.
25	84	Fixed data
26	00	Fixed data
27	63	Fixed data
28	90	White balance adj.
2A	80	White balance adj.
2C	72	Contrast adj.

3. VCO Adjustment (SY-096 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	23
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	8F	34	1D	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	00	Set the data.
6	80	00	01	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

4. Contrast Adjustment (SY-096 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	2C
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	8F	39	80	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	01	Set the data.
6	80	00	05	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

5. V COM Adjustment (SY-096 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	24
Specified Value	The brightness difference between the section A and section B is minimum.

Note: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	80	71	76	Set the data.
3	8F	41	23	Set the data.
4	8F	24		Change the data so that the brightness of the section A and that of the section B is equal.
5	80	71	FF	Set the data.
6	8F	41	21	Set the data.
7				Save the data.
8				Wait for 2 sec.
9				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

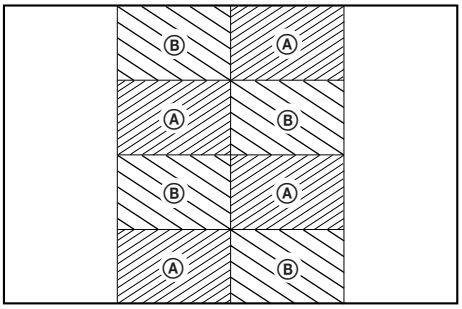


Fig. 6-1-16.

6. White Balance Adjustment (SY-096 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	28, 2A
Specified Value	The LCD screen should not be colored.

Note1: Use the AC power adaptor during this adjustment.
Note2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC801

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	80	71	52	Set the data.
3	80	84	02	Set the data.
4	8F	28	90	Set the data.
5	8F	2A	80	Set the data.
6	8F	28		Check that the LCD screen is not colored. If not colored, proceed to step 10.
7	8F	28		Change the data so that the LCD screen is not colored.
8	8F	2A		Change the data so that the LCD screen is not colored.
9	8F	2A		If the LCD screen is colored, repeat steps 7 to 9.
10	80	71	FF	Set the data.
11				Save the data.
12				Wait for 2 sec.
13				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

6-2. SERVICE MODE

2-1. APPLICATION FOR ADJUSTMENT (SEUS)

The application for adjustment (SEUS) is used for changing the calculation coefficient in signal processing, EVR data, etc. The SEUS performs bi-directional communication between the personal computer (PC) and the unit using the USB signal. The resultant data of this bi-directional communication is written in the non-volatile memory.

2-1-1. Using Method of SEUS

Switch setting:

MS/CF ..... MS (Memory stick)

1. Connection

1) Connect the HASP key to the USB port of the PC.
2) Connect the camera to another USB port of the PC.
3) Insert a memory stick to the camera.
4) Confirm that the camera starts in the USB mode.
5) Start the SEUS on the PC.
6) Click [Connect] on the SEUS screen. If the connection is normal, the SEUS screen will be as shown in Fig. 6-2-1, indicating the "connected" state.

Note: The SEUS will go in "disconnect" state, if the camera is turned off (for instance, by resetting the unit). In such a case, click [Connect] on the SEUS screen to restore the "connected" state.

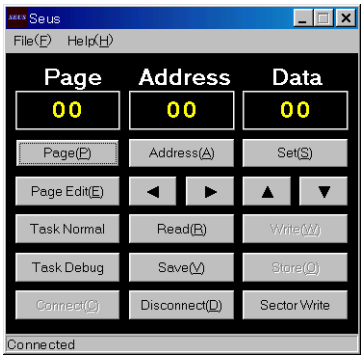


Fig. 6-2-1.

2. Operation

- **Page change**

  To change the page, click [Page] on the SEUS screen and enter the page to be changed. The page is displayed in hexadecimal notation.

- **Address change**

  To change the address, click [Address] on the SEUS screen and enter the address to be changed. Or click [▶] to increase the address, click [◀] to decrease the address. The address is displayed in hexadecimal notation.

- **Data change**

  To change the data, click [Set] on the SEUS screen and enter the data. Or click [▲] to increase the data, click [▼] to decrease the data. The data is displayed in hexadecimal notation.
  This operation does not write the data to the nonvolatile memory. If you want to write the changed data, click [Save] to write it.

- **Data saving**

  To write the all changed data to the nonvolatile memory, click [Save] on the SEUS screen. and wait for 2 sec.

  Note: Even if [Write] or [Store] on the SEUS screen is clicked, the data can not be write to the nonvolatile memory.

- **Data reading**

  The data displayed on the SEUS screen are the data values at the time when the pages and addresses were set, and they are not updated automatically. To check the data change, click [Read] on the SEUS screen and update the displayed data.

2-1-2. Precaution on Use of SEUS

Mishandling of the SEUS may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be saved before beginning adjustments.

1) Click [Page Edit] on the SEUS screen.
2) Click [Page], and enter the page number to be saved.
3) Click [Read] to read the data to be saved from the camera.
4) Click [File] and save the data to the PC.

2-2. SERVICE MODE

1. Setting the Test Mode

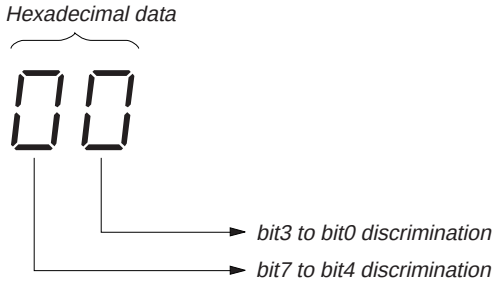
Page 2F	Address 23

Data	Function
80	Normal
11	Forced STILL mode power ON
12	Forced PLAY mode power ON
04	Forced MOVIE mode power ON

- Before setting the data, select page: 00, address: 01, and set data: 01.
- For page 2F, the data set is recorded in the non-volatile memory by saving data. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, release the data setting .
  1) Select page: 00, address: 01, and set data: 01.
  2) Select page: 2F, address: 23, and set data: 80.
  3) Save the data.
  4) Wait for 2 sec.
  5) Select page: 00, address: 01, and set data: 00.

2. Bit value discrimination

Bit values must be discriminated using the hexadecimal data for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Examples: If the hexadecimal data is “8E”, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Switch check (1)

Page 20	Address 80

Bit	Function	When bit value=1	When bit value=0
0	POWER switch (XPWER ON) (Control switch block (TOP))	OFF	ON

Using method:

1) Select page: 20, address: 80.
2) Read the data. By discriminating the bit value of the data, the state of the switch can be discriminated.

4. Switch check (2)

Page 20	Address 90 to 96

Using method:

1) Select page: 20, address: 90 to 96.
2) Read the data. By discriminating the data, the pressed key can be discriminated.

Address	Data						
	00 to 0B	0C to 26	27 to 47	48 to 72	73 to A4	A5 to DC	DD to FF
90 (KEY AD0) (IC401Ⓙ6)	Control button DOWN (Control switch block (MID)) S008	Control button UP (Control switch block (MID)) S006	DISPLAY WINDOW BACKLIGHT (Control switch block (TOP)) S003	WHITE BALANCE (Control switch block (TOP)) S004	EXPOSURE (Control switch block (TOP)) S005	COMPACT FLASH (Control switch block (UNDER)) S006	MEMORY STICK (Control switch block (UNDER)) S006
91 (KEY AD1) (IC401Ⓗ6)	Control button RIGHT (Control switch block (MID)) S003	Control button LEFT (Control switch block (MID)) S010	Control button CENTER (Control switch block (MID)) S007	AE LOCK (Control switch block (MID)) S012	MENU (Control switch block (MID)) S002		No key input
92 (KEY AD2) (IC401Ⓖ6)	QUICK REVIEW (Control switch block (UNDER)) S005	DIGITAL ZOOM (Control switch block (UNDER)) S004	SELF TIMER (Control switch block (UNDER)) S003	SCREEN STATUS (Control switch block (UNDER)) S002		FINDER (Control switch block (UNDER)) S001	LCD (Control switch block (UNDER)) S001
93 (KEY AD3) (IC401Ⓙ7)	OPEN (FLASH) (SW-410 board) (S001)	FLASH (SW-410 board) (S002)	METERING MODE (SW-410 board) (S005)	MACRO (SW-410 board) (S003)	BURST/BRACKET (SW-410 board) (S006)	FOCUS AUTO (SW-410 board) (S004)	FOCUS MANUAL (SW-410 board) (S004)
94 (KEY AD4) (IC401Ⓗ7)	NIGHT SHOT/ NIGHT FRAMING (SW-410 board) (S007)						No key input
95 (MODE DIAL 0) (IC401Ⓙ8)	Mode dial STILL (AE-S) (Control switch block (TOP))	Mode dial STILL (AE-A) (Control switch block (TOP))	Mode dial STILL (MANUAL) (Control switch block (TOP))	Mode dial STILL (SCN) (Control switch block (TOP))	Mode dial MOVIE (Control switch block (TOP))		No key input
96 (MODE DIAL 1) (IC401Ⓙ9)	Mode dial STILL (AUTO) (Control switch block (TOP))	Mode dial STILL (P AUTO) (Control switch block (TOP))	Mode dial PB (Control switch block (TOP))	Mode dial SET UP (Control switch block (TOP))			No key input

5. Switch check (3)

Page 60	Address B9

Function	When data = 11	When data = 01
FLASH OPEN DETECT switch (LS-067 board S001)	Close	Open

Using method:

1) Select page: 60, address: B9.
2) Read the data. By discriminating the data, the state of the switch can be discriminated.

6. Switch check (4)

Page 80	Address 13

Function	When data = 00	When data = 01	When data = 02
Shutter button (XAE LOCK SW) (Control switch block (TOP))	OFF	ON	ON
Shutter button (XSHTR ON SW) (Control switch block (TOP))	OFF	OFF	ON

Using method:

1) Select page: 80, address: 13.
2) Read the data. By discriminating the data, the state of the switches can be discriminated.

7. Switch check (5)

Page 80	Address 14

Function	When data = 00	When data = 01
CF COVER switch (Control switch block (CENTER))	Open	Close

Using method:

1) Select page: 80, address: 14.
2) Read the data. By discriminating the data, the state of the switch can be discriminated.

8. Switch check (6)

Page 80	Address 15

Using method:

1) Select page: 80, address: 15.
2) By discriminating the data, the rotation of the control dial can be discriminated.

Control dial (Control switch block (CENTER))	Data
When rotated in the left direction.	01
When rotated in the right direction.	02

9. LED, Segment LCD check

Page 20	Address 04
Page 80	Address 12
Page 8E	Address FE

Using method:

1) Select page: 00, address: 01, set data: 01.
2) Select page: 20, address: 04, set data: 02.
3) Select page: 8E, address: FE, set data: 20.
4) Select page: 80, address: 12, set data: 01.
6) Check that all LED (Power, Charge, Tally, Access, Segment LCD back light) are lit.
7) Select page: 20, address: 04, set data: 08.
8) Check that all segment of the segment LCD are lit.
9) Select page: 20, address: 04, set data: 00.
10) Select page: 80, address: 12, set data: 00.
11) Select page: 8E, address: FE, set data: 00.
12) Select page: 00, address: 01, set data: 00.

10. Record of Use check

Page 4F	Address 94 to 97

Address	Function	Remarks
94	Recording counter (Hexadecimal)	1000000-digit and 1000000-digit
95		1000000-digit and 10000-digit
96		1000-digit and 100-digit
97		10-digit and 1-digit

Using method:

1) The recording counter data is displayed at page: 4F, addresses: 94 to 97. These data are named D_{94}, D_{95}, D_{96} and D_{97} respectively.
2) Calculate the recording counter (N) using following equation. (Hexadecimal calculation)
   $N = D_{97} + D_{96} \times 100 + D_{95} \times 10000 + D_{94} \times 1000000$

11. Self Diagnostics Log check

Page 20	Address B0 to B8

Address	Initial value	Function
B0	00	“Repaired by” code (Occurred 1st time) *1
B1	00	“Block function” code (Occurred 1st time)
B2	00	“Detailed” code (Occurred 1st time)
B3	00	“Repaired by” code (Occurred 2nd time) *1
B4	00	“Block function” code (Occurred 2nd time)
B5	00	“Detailed” code (Occurred 2nd time)
B6	00	“Repaired by” code (Occurred 3rd time) *1
B7	00	“Block function” code (Occurred 3rd time)
B8	00	“Detailed” code (Occurred 3rd time)

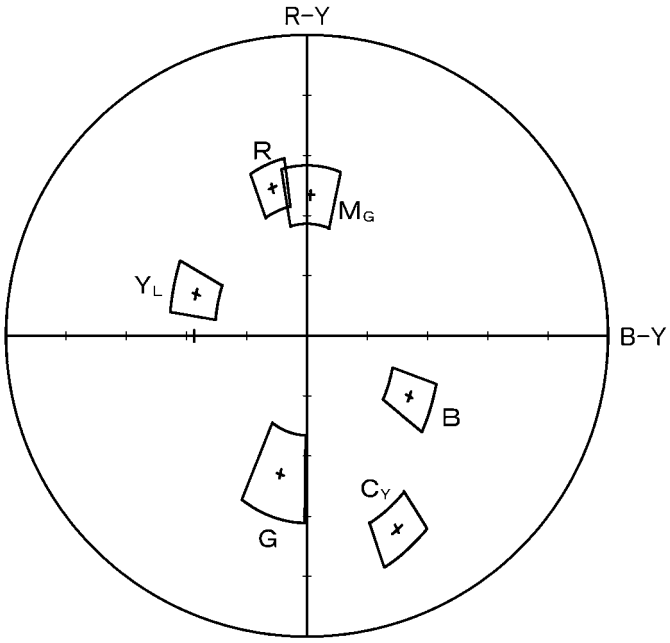
*1: “C” → “01”, “E” → “03”

Using method:

1) The self diagnostics log is displayed at page: 20, addresses: B0 to B5.
   Note: These data will be erased when the lithium battery (LR-018 board) is removed.

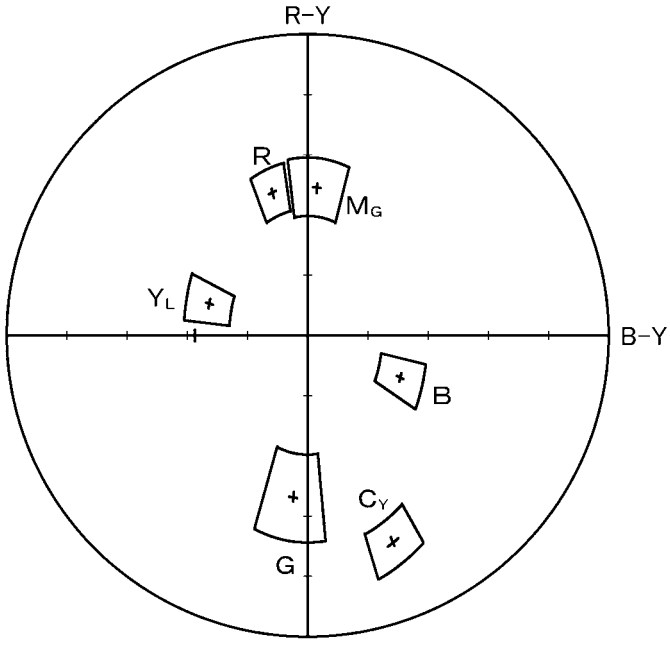
〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

For CAP-Normal mode

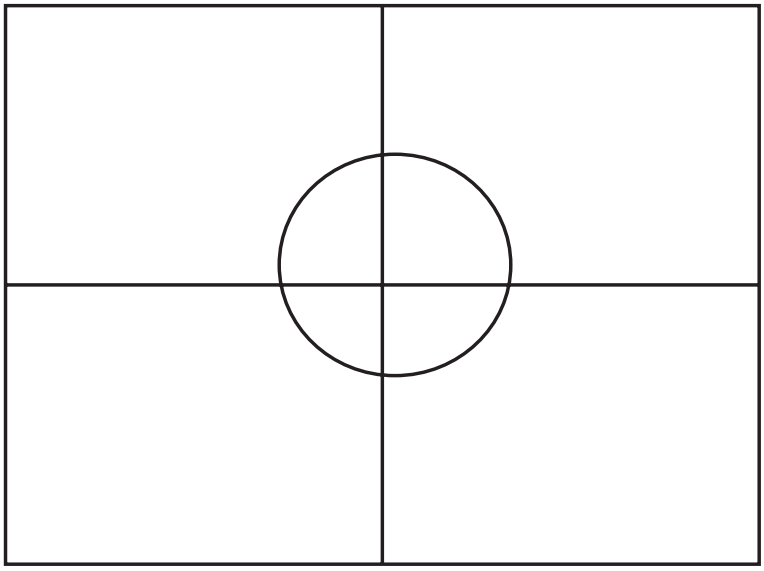


Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For CAP-Real mode

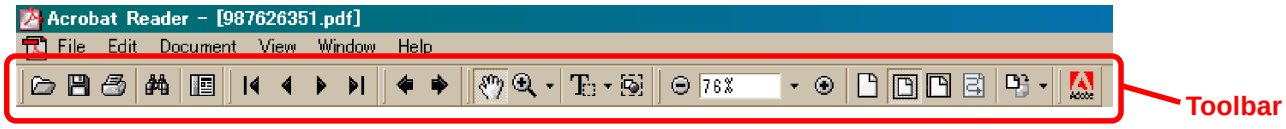


〈AF ILLUMINATION FRAME〉



Take a copy of AF ILLUMINATION FRAME with a clear sheet for use.

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

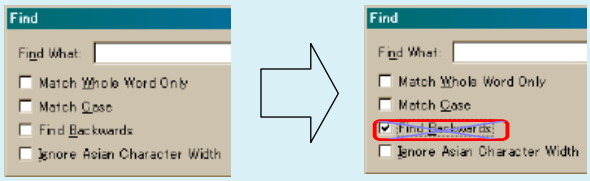
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

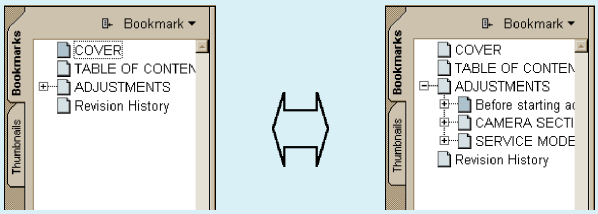
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

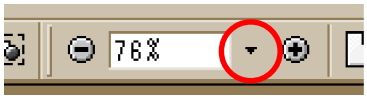
Moving with bookmark:
Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.12	Official Release	—	—

DSC-F828

SONY

LEVEL 2

SERVICE MANUAL

Ver 1.4 2005. 11

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Korea Model
Tourist Model
Chinese Model
Japanese Model

SUPPLEMENT-3

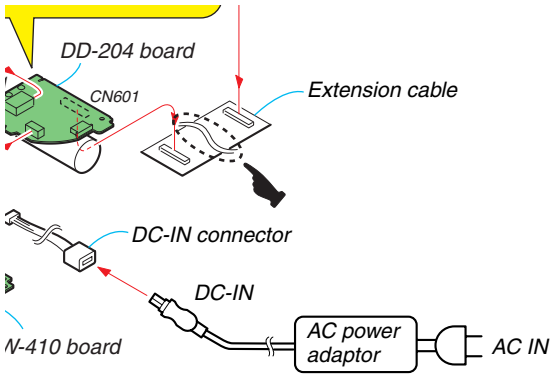
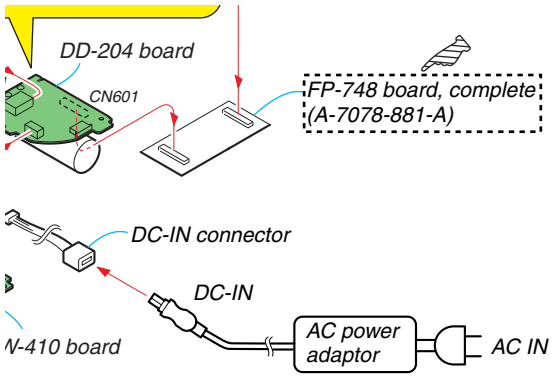
File this supplement-3 with the service manual.
(PV05-059)

- Change of disassembly
- Change of schematic diagrams
- Change of printed wiring boards
- Change of repair parts list
- Change of the UA-003 board suffix number

• Change of disassembly

2. DISASSEMBLY

: Changed portion : Deleted portion

Page	Before change	After change
2-18	**[SERVICE POSITION (SY-095 BOARD)]** 	

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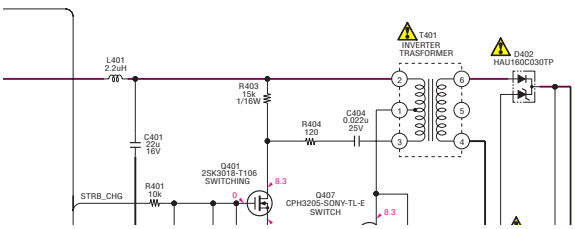
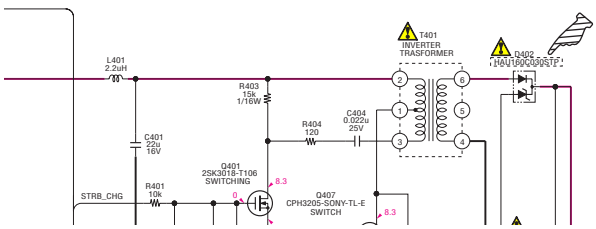
• Change of schematic diagrams

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

: Changed portion

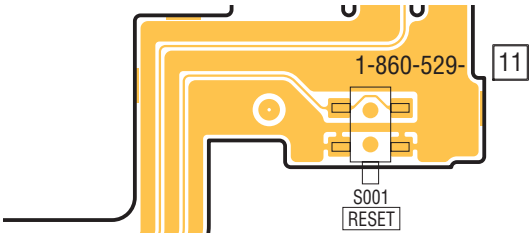
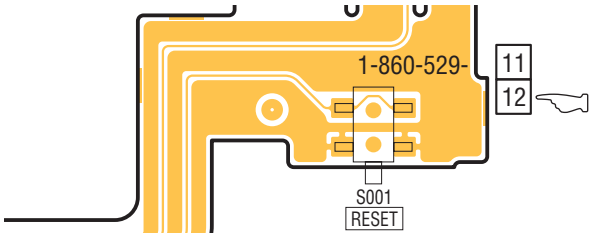
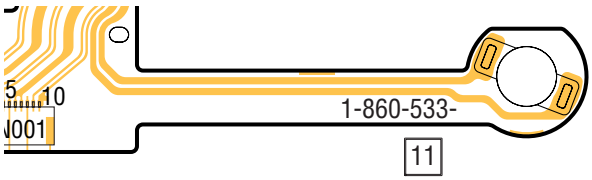
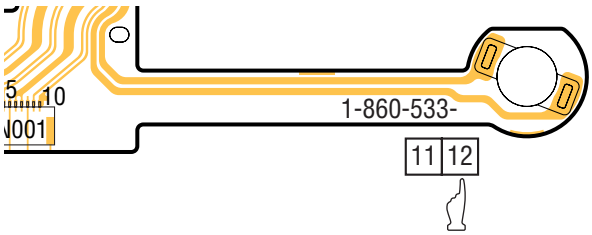
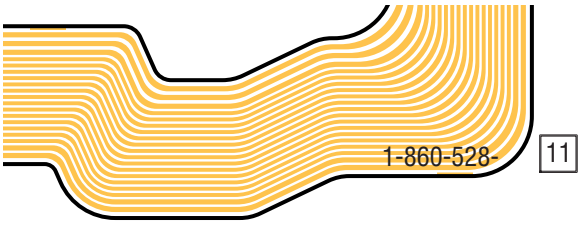
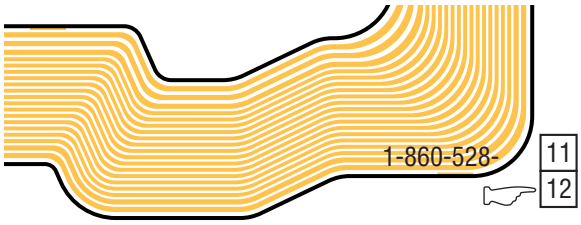
Page	Before change	After change
4-12	DD-204 BOARD (Location: A-21) 	

• Change of printed wiring boards

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

: Added portion

Page	Before change	After change
4-50	LR-018 BOARD 	
4-52	MT-067 BOARD 	
4-54	LB-091 BOARD 	

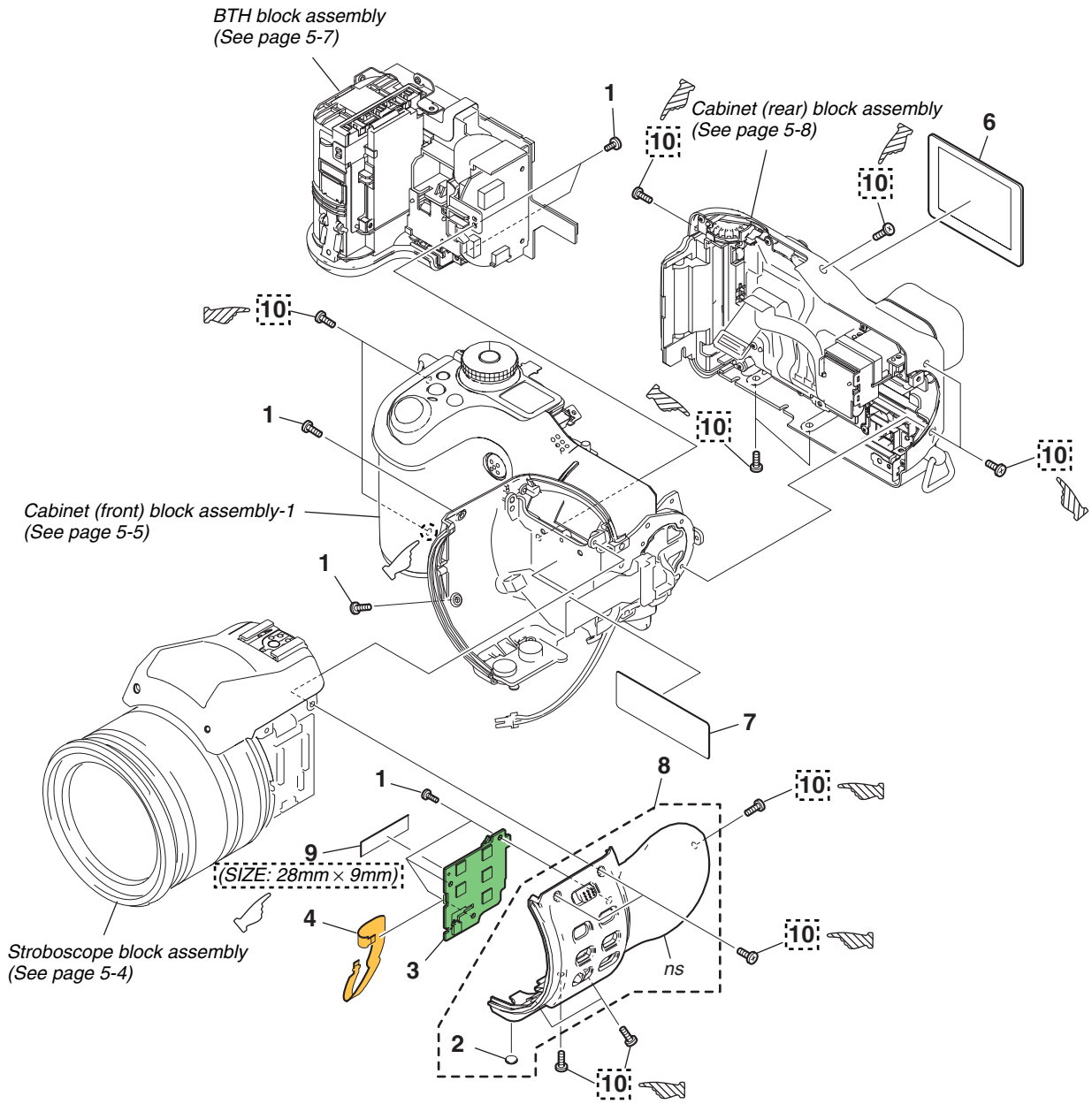
• Change of repair parts list

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

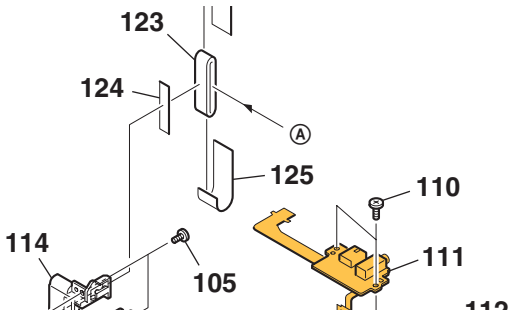
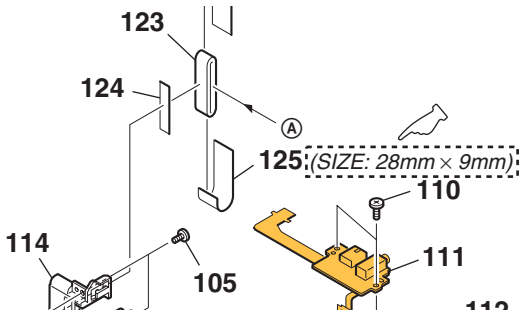
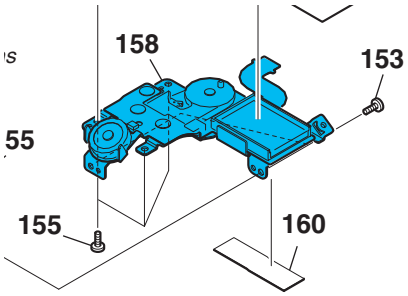
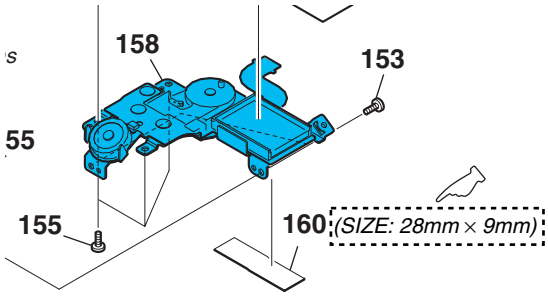
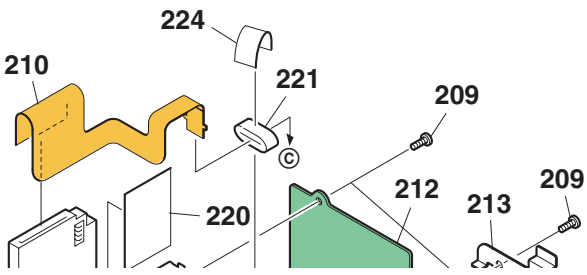
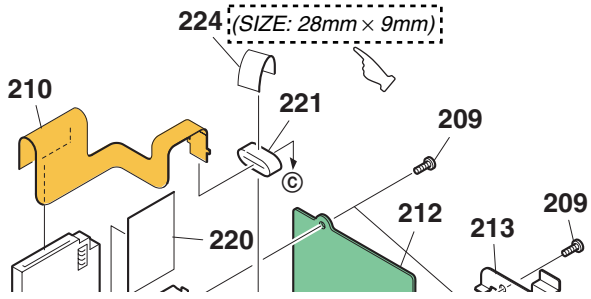
: Changed portion : Added portion

Page	Changed contents
5-3	**5-1-1. OVERALL SECTION**

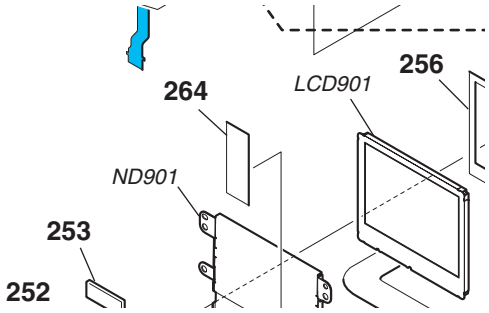
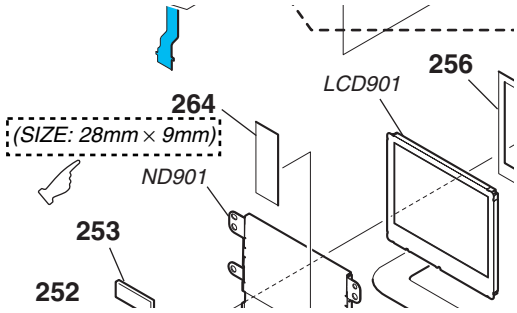


Before change			After change		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
8	X-3953-809-1	CABINET (LR) ASSY	8	X-3953-809-3	CABINET (LR) ASSY
—	—	—	10	2-597-625-31	SREW(M2),LOCK ACE,P2
5-4	**5-1-2. STROBOSCOPE BLOCK ASSEMBLY**				
64	3-084-817-01	GRIP	64	3-090-167-01	SCREW (M1.7)

: Changed portion : Added portion

Page	Before change	After change
5-5	**5-1-3. CABINET (FRONT) BLOCK ASSEMBLY-1**  Ref. No. Part No. Description 101 X-3953-808-1 CABINET (LL) ASSY 127 3-088-442-01 SHEET (F1) ADHESIVE	 Ref. No. Part No. Description 101 X-3953-808-2 CABINET (LL) ASSY 127 3-090-369-01 TAPE (F3)
5-6	**5-1-4. CABINET (FRONT) BLOCK ASSEMBLY-2**  157 3-087-108-01 CUSHION, MD SP901 1-825-663-11 SPEAKER (1.6CM)	 157 3-087-108-11 CUSHION, MD SP901 1-825-663-12 SPEAKER (1.6CM)
5-7	**5-1-5. BTH BLOCK ASSEMBLY**  208 X-3953-805-2 HOLDER ASSY, BT	 208 X-3953-805-7 HOLDER ASSY, BT

: Added portion

Page	Before change	After change
5-8	**5-1-6. CABINET (REAR) BLOCK ASSEMBLY** 	

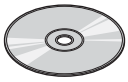
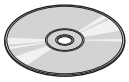
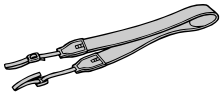
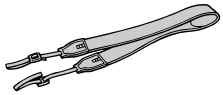
5-2. ELECTRICAL PARTS LIST

: Changed portion

Page	Before change	After change
5-11	**DD-204 BOARD** Ref. No. Part No. Description ⚠D402 6-500-237-01 DIODE HAU160C030TP	Ref. No. Part No. Description ⚠D402 6-500-962-01 DIODE HAU160C030STP

Checking supplied accessories.

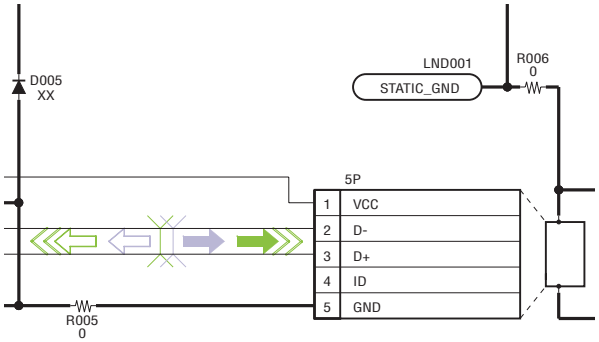
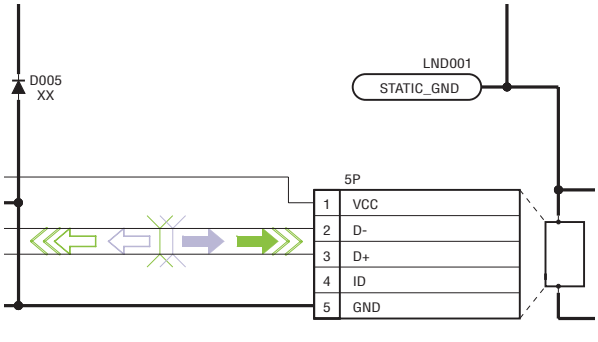
: Changed portion

Page	Before change	After change
5-20	 *CD-ROM* *(Image Data Converter) (1)* *3-087-661-01*	 *CD-ROM* *(Image Data Converter) (1)* *3-087-661-03*
	 *Shoulder strap (1)* *3-071-638-11*	 *Shoulder strap (1)* *3-071-638-12*

• Change of the UA-003 board suffix number

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

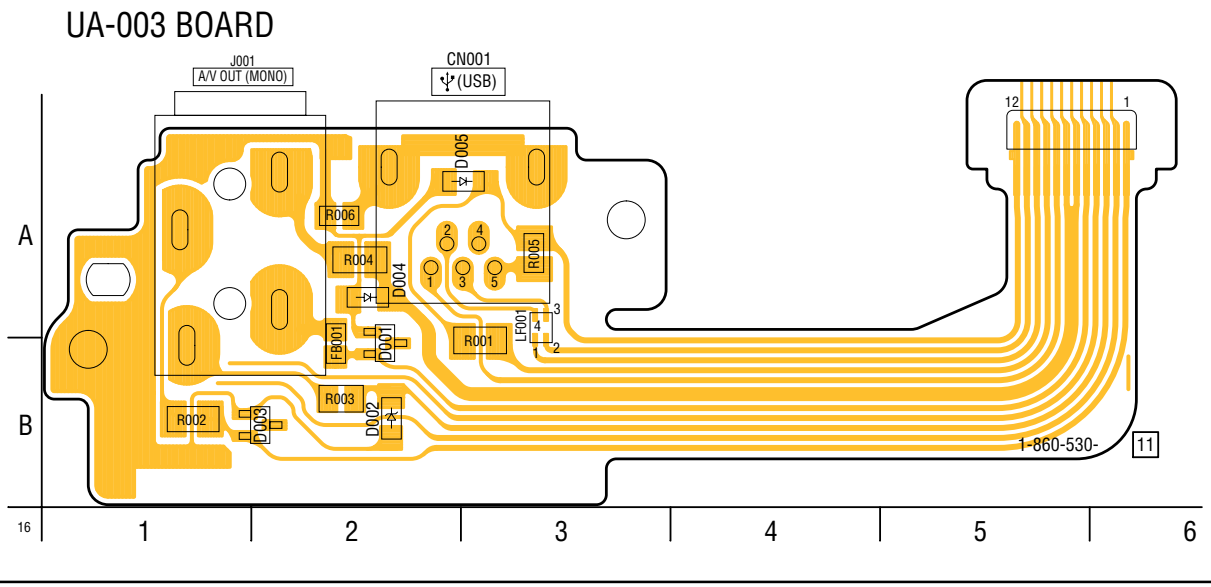
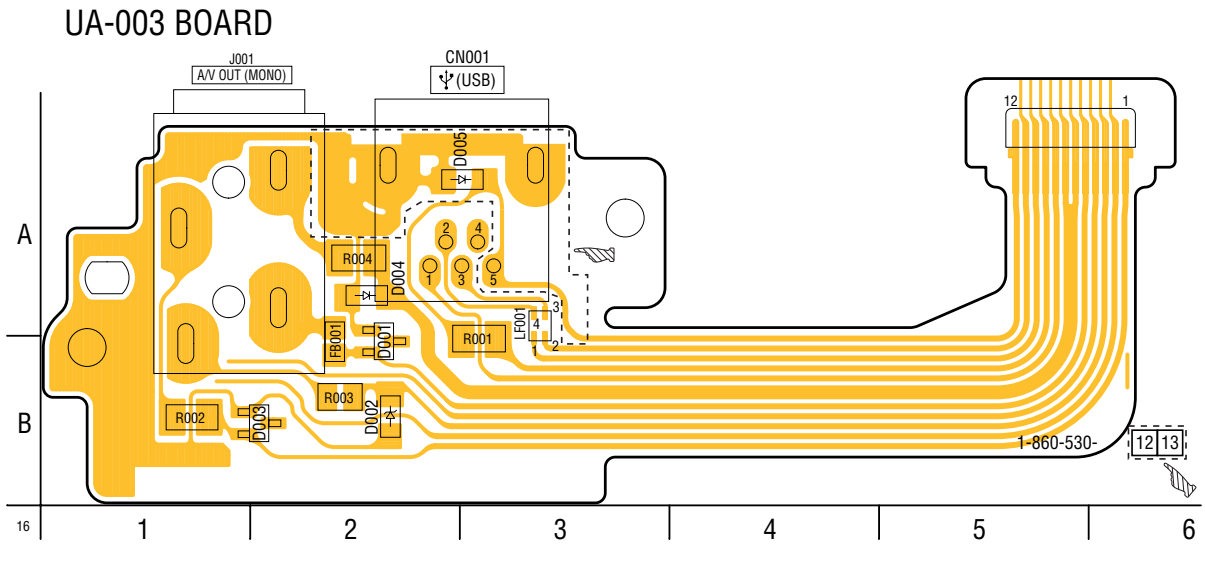
Page	SUFFIX -11	SUFFIX -12, -13
4-15	**UA-003 BOARD (Location: D-4, C-6)** 	

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-3. PRINTED WIRING BOARDS

UA-003 BOARD

: Changed portion

Page	SUFFIX -11
4-54	
	SUFFIX -12, -13
	

5-2. ELECTRICAL PARTS LIST

Page	SUFFIX -11					SUFFIX -12, -13		
5-19	**UA-003 BOARD**							
	Ref. No.	Part No.	Description			Ref. No.	Part No.	Description
	R005	1-216-295-91	SHORT CHIP	0		———	———————	———————————
	R006	1-216-864-11	METAL CHIP	0	5% 1/16W	———	———————	———————————

DSC-F828

SONY

LEVEL 2

SERVICE MANUAL

Ver 1.3 2005.07

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Korea Model
Tourist Model
Chinese Model
Japanese Model

CORRECTION-1

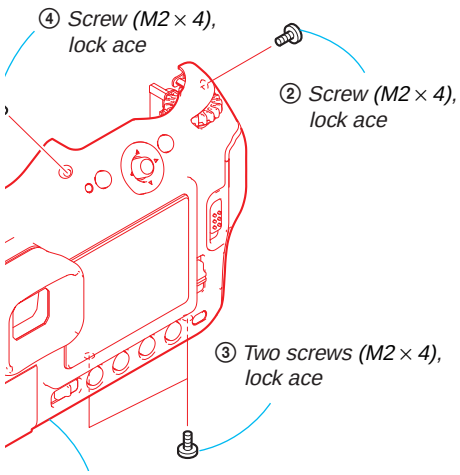
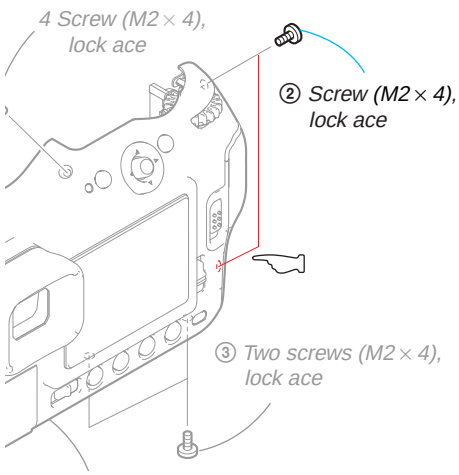
Correct your service manual as shown below.

- Correction of disassembly
- Correction of repair parts list

2. DISASSEMBLY

2-9. REAR CABINET BLOCK ASSEMBLY

☞ : Added portion.

Page	INCORRECT	CORRECT
2-8		

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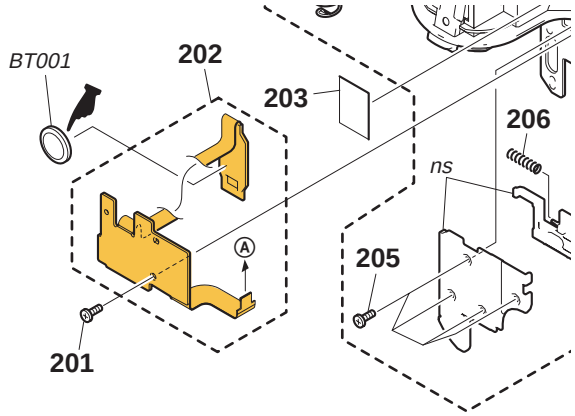
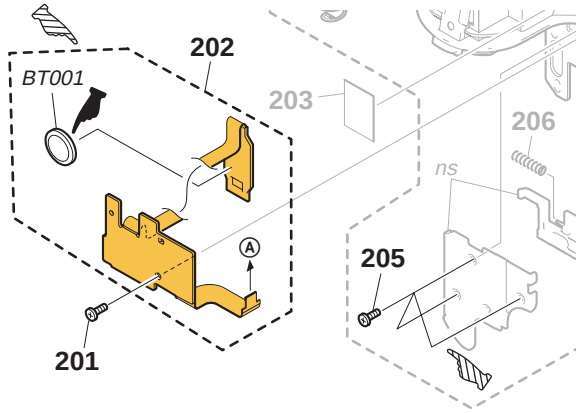
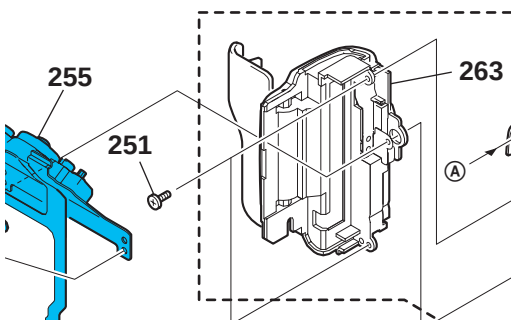
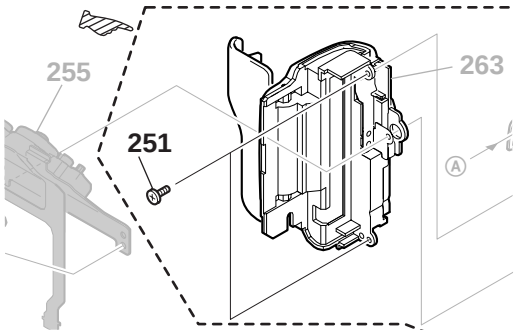
5. REPAIR PARTS LIST

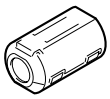
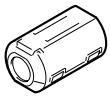
5-1. EXPLODED VIEWS

: Changed portion : Added portion

Page	Before change	After change
5-3	**5-1-1. OVERALL SECTION** Ref. No. Part No. Description Remarks 2 3-051-124-01 FOOT, RUBBER	Ref. No. Part No. Description Remarks 2 2-102-435-01 FOOT, RUBBER
5-4	**5-1-2. STROBOSCOPE BLOCK ASSEMBLY** 59 X-3953-800-2 ST ASSY	59 X-3953-800-1 ST ASSY
5-5	**5-1-3. CABINET(FRONT) BLOCK ASSEMBLY-1** 103 3-051-124-01 FOOT, RUBBER	103 2-102-435-01 FOOT, RUBBER
5-6	**5-1-4. CABINET(FRONT) BLOCK ASSEMBLY-2** 156 X-3953-804-2 UPPER ASSY, CABINET	156 X-3953-804-1 UPPER ASSY, CABINET
5-7	**5-1-5. BTH BLOCK ASSEMBLY**  205 3-375-114-71 SCREW ——— ——— ———	 205 3-355-424-81 SCREW, TAPPING ⚠BT001 1-756-191-31 BATTERY, LITHIUM (SECONDARY)
5-8	**5-1-6. CABINET(REAR) BLOCK ASSEMBLY**  258 X-3953-806-2 CABINET (REAR) ASSY 259 3-087-155-03 SHEET, ADHESIVE, LCD WINDOW 262 3-051-124-01 FOOT, RUBBER	 258 X-3953-806-1 CABINET (REAR) ASSY 259 3-087-155-01 SHEET, ADHESIVE, LCD WINDOW 262 2-102-435-01 FOOT, RUBBER

Checking supplied accessories.

: Changed portion

Page	Before change	After change
5-20E	 *Clamp filter (Ferrite core) (for AC-L15A)* *1-543-798-21* **Other accessories** 3-084-996-51 MANUAL, INSTRUCTION (TRADITIONALCHINESE) (E,CH,JE,HK)	 *Clamp filter (Ferrite core) (for AC-L15A)* ** 1-543-798-21* **Other accessories** 3-084-996-51 MANUAL, INSTRUCTION (TRADITIONALCHINESE/SIMPLIFIED CHINESE) (E,CH,JE,HK)

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.12	Official Release	—	—
1.1	2004.04	Supplement-1	Addition of error code	No
1.2	2005.05	Supplement-2	Addition of service parts	No

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.12	Official Release	—	—
1.1	2004.04	Supplement-1	Addition of error code	No

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.12	Official Release	—	—
1.1	2004.04	Supplement-1	Addition of error code	No
1.2	2005.05	Supplement-2	Addition of service parts	No
1.3	2005.07	Correction-1	• Correction of Disassembly • Correction of repair parts list S.M. correction: Page 2-8, 5-3, 5-4, 5-5, 5-6, 5-7, 5-8, 5-20	Yes
1.4	2005.11	Supplement-3 (PV05-059)	• Change of disassembly • Change of schematic diagrams • Change of printed wiring boards • Change of repair parts list • Change of the UA-003 board suffix number	No

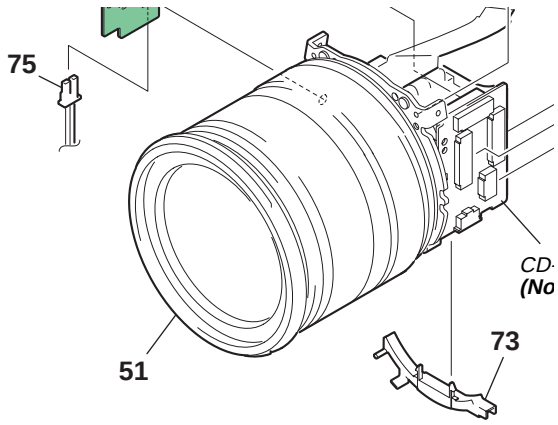
5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

☞ : Added portion.

<table>
<tr><th>Page</th><th>Before change</th><th>After change</th></tr>
<tr><td>5-4</td><td>

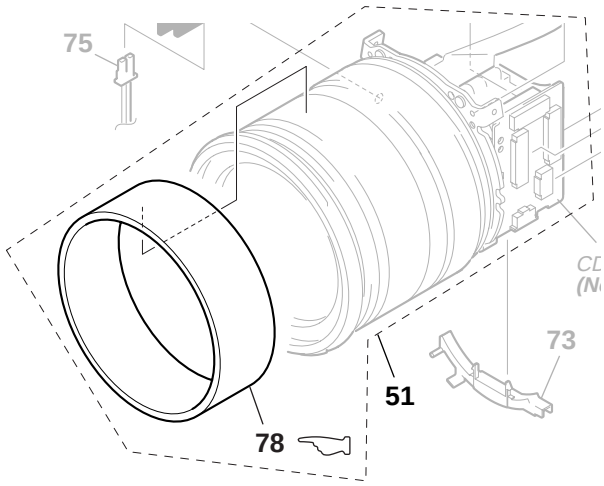
5-1-2. STROBOSCOPE BLOCK ASSEMBLY



Ref. No. | Part No. | Description

—— | ———— | ————————

</td><td>

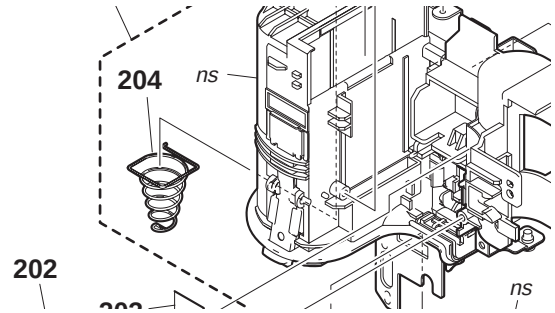


Ref. No. | Part No. | Description

78 | 3-088-184-01 | RUBBER, ZOOM ☞

</td></tr>
<tr><td>5-7</td><td>

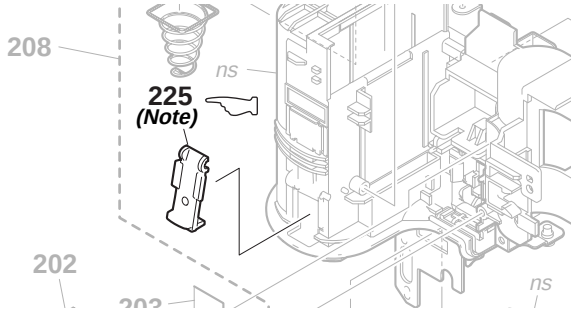
5-1-5. BTH BLOCK ASSEMBLY



Ref. No. | Part No. | Description

—— | ———— | ————————

</td><td>



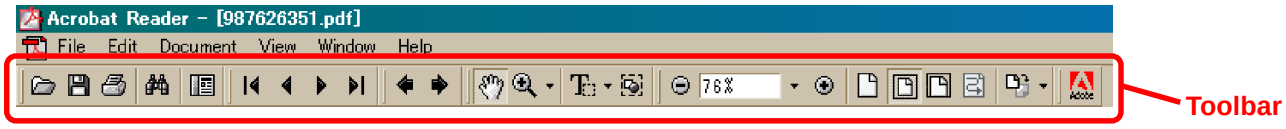
Ref. No. | Part No. | Description

225 | 3-087-132-02 | CLAW, BT LOCK ☞

Note :
Refer to Technical News (PV04DSC545)(PV04DSC045) for Disassembly and Exploded Views.

</td></tr>
</table>

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

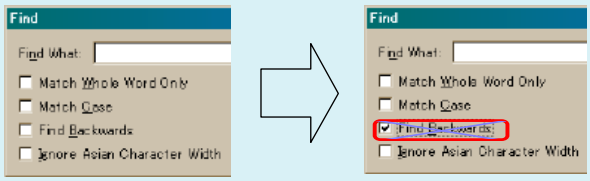
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

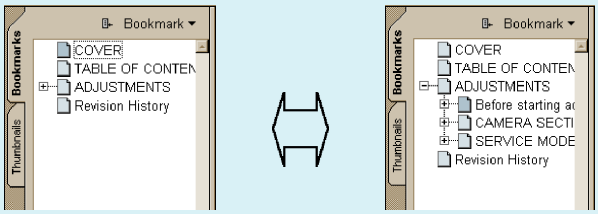
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

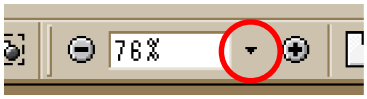
Moving with bookmark:
Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

DSC-F828

Ver 1.0 2003. 12
Revision History

How to use Acrobat Reader

SECTION 6 ADJUSTMENTS

ADJ

Link

- Before starting adjustment
  - Adjusting items when replacing main parts and boards
- ADJUSTMENT
  - PREPARATIONS BEFORE ADJUSTMENT
  - INITIALIZATION OF DATA
  - VIDEO SYSTEM ADJUSTMENTS
  - CAMERA SYSTEM ADJUSTMENTS
  - COLOR ELECTRONIC VIEW FINDER ADJUSTMENT
  - LCD SYSTEM ADJUSTMENT
- SERVICE MODE
  - APPLICATION FOR ADJUSTMENT (SEUS)
  - SERVICE MODE

Contents of LEVEL 2 and LEVEL 3 Service Manual

CONTENTS	LEVEL 2	LEVEL 3
1. SERVICE NOTE	○	×
2. DISASSEMBLY	○	×
3. BLOCK DIAGRAMS	OVERALL POWER	×
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	DD-204, LR-018, ST-088, LS-067, MT-067, SI-037, UA-003, LB-091, CF-097, SW-410, AJ-007 BOARD CONTROL SWITCH BLOCK (TOP)/(MID)/(UNDER)	SY-096 BOARD
5. REPAIR PARTS LIST	EXPLODED VIEWS	×
	ELECTRICAL PARTS	○ (SY-096 BOARD)

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9-876-279-51

Sony EMCS Co.

2003L1600-1
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* Color reproduction frame is shown on page 6-43.
* AF illumination frame is shown on page 6-44.

SECTION 6
ADJUSTMENTS

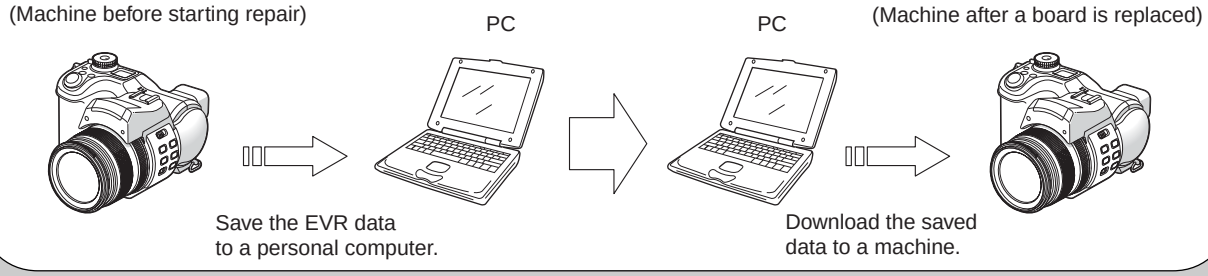
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

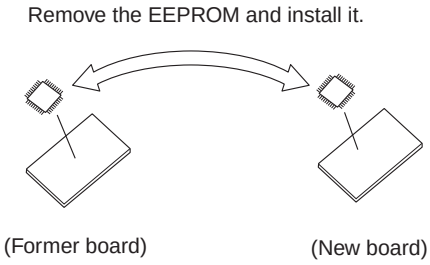
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



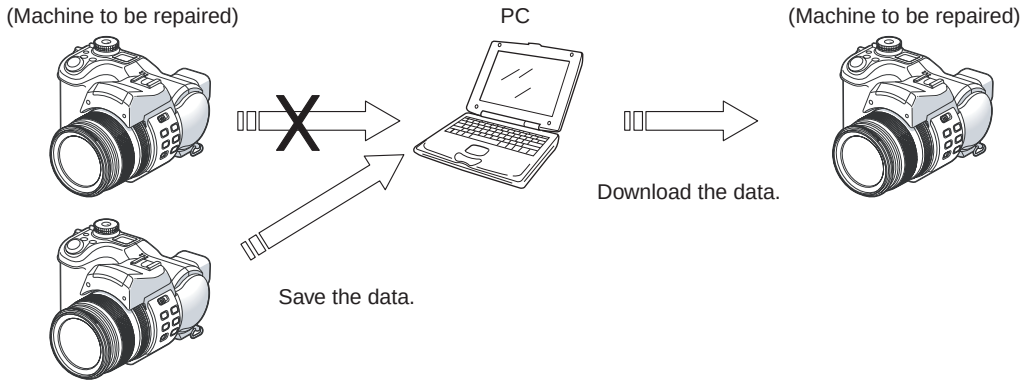
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 6-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	Xenon tube	EVF block LCD unit (LCD902)	LCD block LCD unit (LCD901)	LCD block Back light unit	Mounted Parts replacement: LB-091 board D001 (EVF back light)	LS-067 board D001 (Laser unit)	SY-096 board IC301 (Camera DSP)	SY-096 board IC303 (Video amp.)	SY-096 board IC801 (LCD DRIVER)	SY-096 board IC902 (EVF DRIVER)	Board replacement: LB-091 board (COMPLETE)	LS-067 board (COMPLETE)	SY-096 board (COMPLETE)	EEPROM replacement: SY-096 board IC501 (Camera DSP) (With built-in flash memory)
Initialization of data	Initialization of data														●	●
Video	Video output level adj.								●	●					●	●
Camera	Iris reset sensor adj.	●													●	●
	Flange back adj.	●													●	●
	Color shade check	●													●	●
	F No. compensation	●													●	●
	Mechanical shutter adj.	●													●	●
	Light value adj.	●													●	●
	Linear matrix adj.	●													●	●
	AWB 3200K standard data input	●													●	●
	AWB 5800K standard data input	●													●	●
	Color reproduction check	●													●	●
	CCD linearity check	●													●	●
	CCD white defect compensation check	●													●	●
	CCD black defect compensation check	●													●	●
	Strobe adj.	●	●												●	●
	AF laser output adj.	●						●						●	●	●
EVF	EVF initial data input														●	●
	VCO adj.											●			●	●
	Bright adj.											●			●	●
	Contrast adj.								●			●			●	●
	V COM adj.											●			●	●
	White balance adj.			●			●					●	●		●	●
LCD	LCD initial data input														●	●
	VCO adj.										●				●	●
	Contrast adj.								●		●				●	●
	V COM adj.				●						●				●	●
	White balance adj.				●	●					●				●	●

Table. 6-1-1.

6-1. ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope • AC power adapter
• Calculator which can hexadecimal calculation.

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	Pattern box PTB-450	J-6082-200-A	
J-3	Color bar chart for pattern box	J-6020-250-A	
J-4	Siemens star chart	J-6080-875-A	For checking the flange back
J-5	Clear chart for pattern box	J-6080-621-A	
J-6	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-7	Camera table	J-6082-384-A	For adjusting the flange back
J-8	Personal computer with Windows98/ME/2000/XP installed and with two USB ports		
J-9	USB cable	1-823-932-11	For connecting the personal computer
J-10	Application for adjustment (SEUS) and HASP key		Contact our service headquarter of each area how to get the application for adjustment (SEUS) and HASP key
J-11	Background paper	J-2501-130-A	For adjusting the strobe

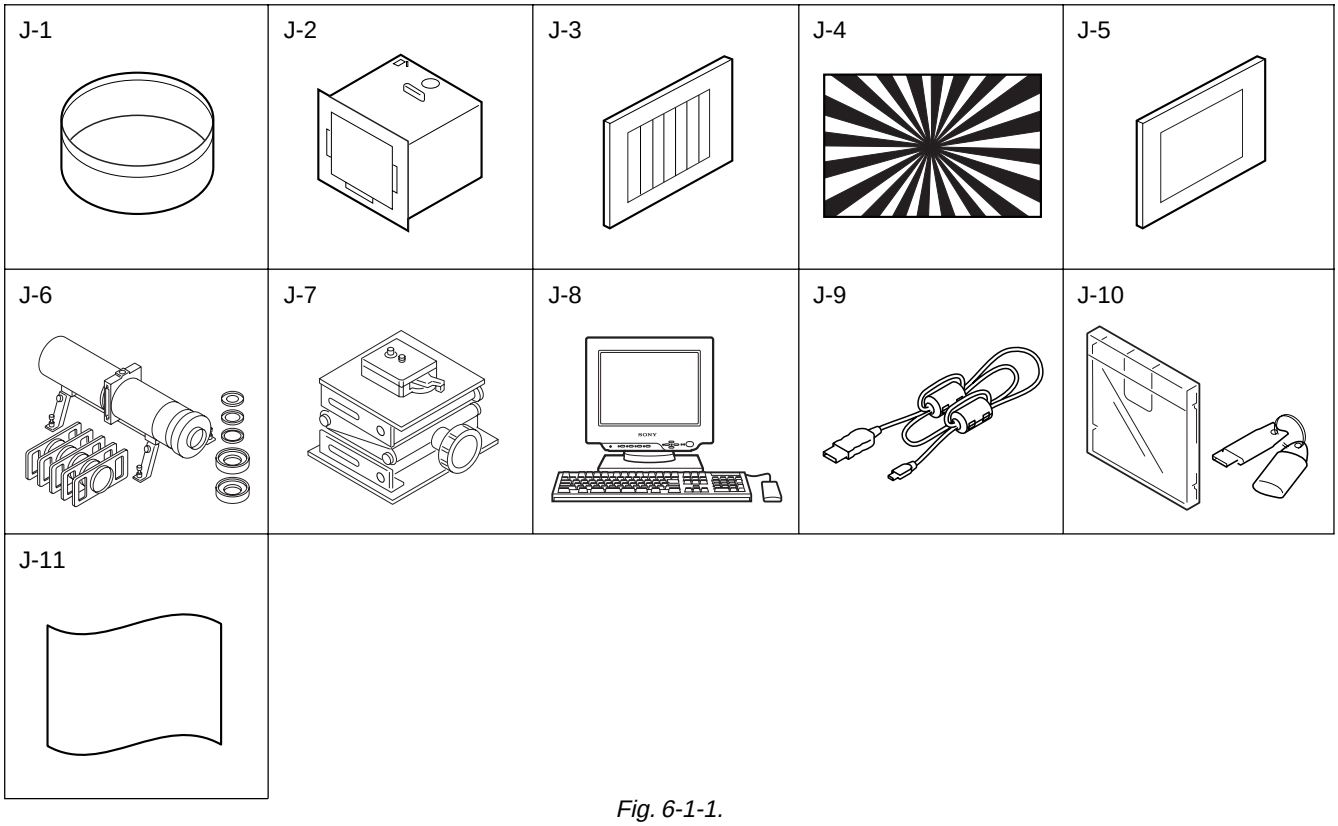


Fig. 6-1-1.

1-1-2. Preparations

1) Connect the equipment for adjustments according to Fig. 6-1-4.
2) Set the MS/CF switch to MS (Memory stick).
3) Start up the application for adjustment (SEUS).

Note1: Setting the "Forced Power ON Mode (Forced STILL Mode)"
1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and write data: 11.
3) Save the data.
4) Wait for 2 sec.
The above procedure will enable the power (STILL mode) to be turned on with POWER switch (Control switch block (TOP)) disconnected. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note2: Setting the "Forced Power ON Mode (Forced PLAY Mode)"
1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and write data: 12.
3) Save the data.
4) Wait for 2 sec.
The above procedure will enable the power (PALY mode) to be turned on with POWER switch (Control switch block (TOP)) disconnected. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note3: Exiting the "Forced Power ON Mode"
1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and write data: 80.
3) Save the data.
4) Wait for 2 sec.
5) Select page: 00, address: 01, and set data: 00.

1-1-3. Discharging of the flashlight power supply

The capacitor which is used as power supply of flashlight is charged with 200V to 300V voltage. When disassembling the unit, discharge this voltage in order to protect service engineers from electric shock.

Discharge procedure

1. Remove the power supply (AC power adaptor or battery).
2. Fabricate the discharging jig as shown in Fig. 6-1-3. locally by yourself. Connect the discharging jig to the positive (+) and negative (–) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.

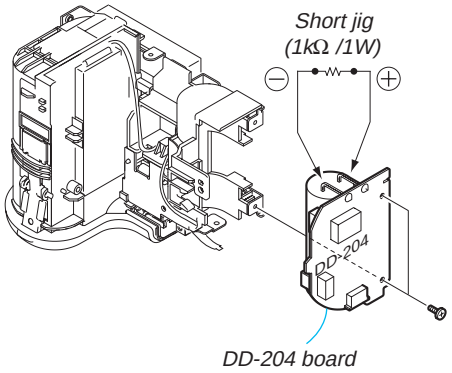


Fig. 6-1-3.

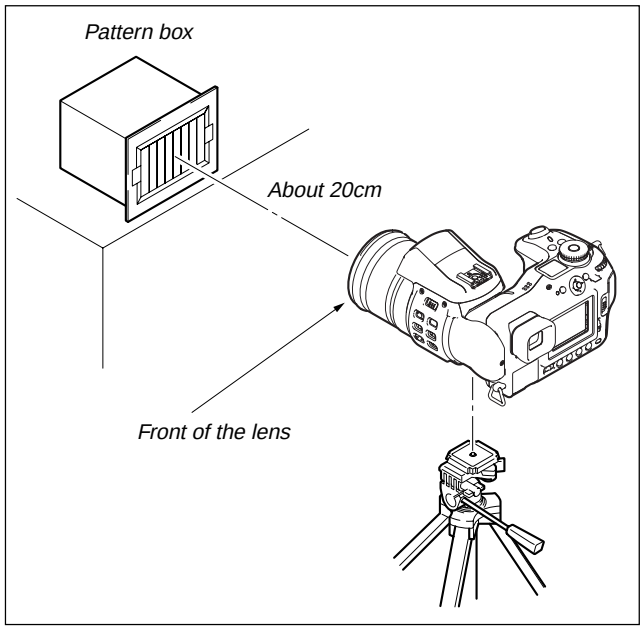


Fig. 6-1-2.

[CONNECTION OF EQUIPMENT]

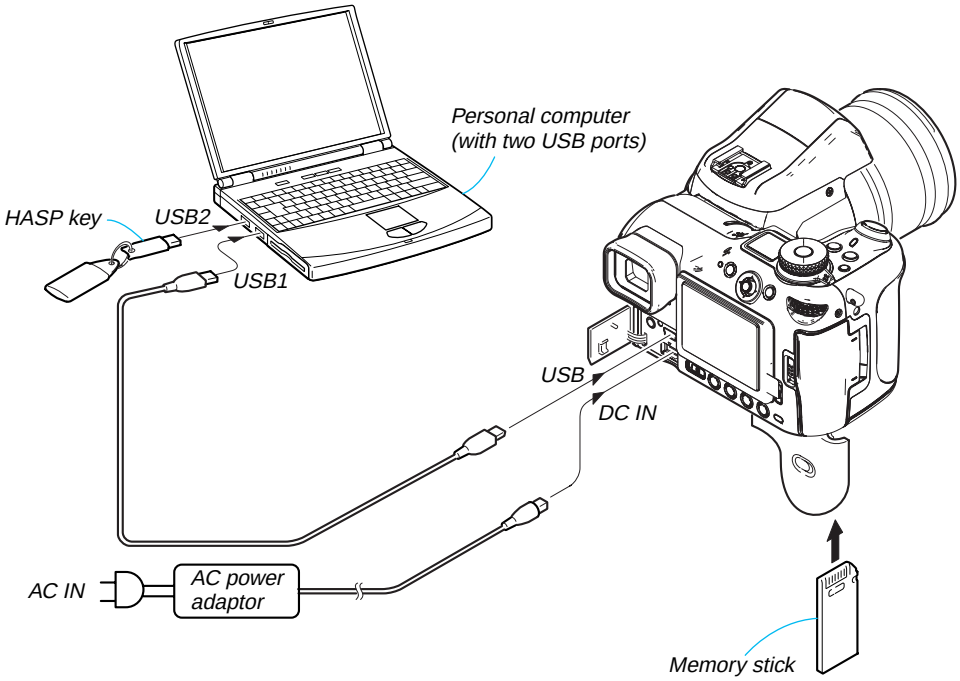


Fig. 6-1-4.

1-1-4. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

Switch settings

1. Mode dial ..... STILL (P AUTO) (**P**)
2. ZOOM ..... WIDE end
3. MS/CF ..... MS (Memory stick)
4. MACRO ( ) ..... ON
5. WHITE BALANCE ..... AUTO
6. EV 0EV
7. FOCUS ..... AUTO
8. USB CONNECT (SET UP setting) ..... NORMAL
9. VIDEO OUT (UP setting) ..... NTSC

2. Order of Adjustments

Basically carry out adjustments in the order given.

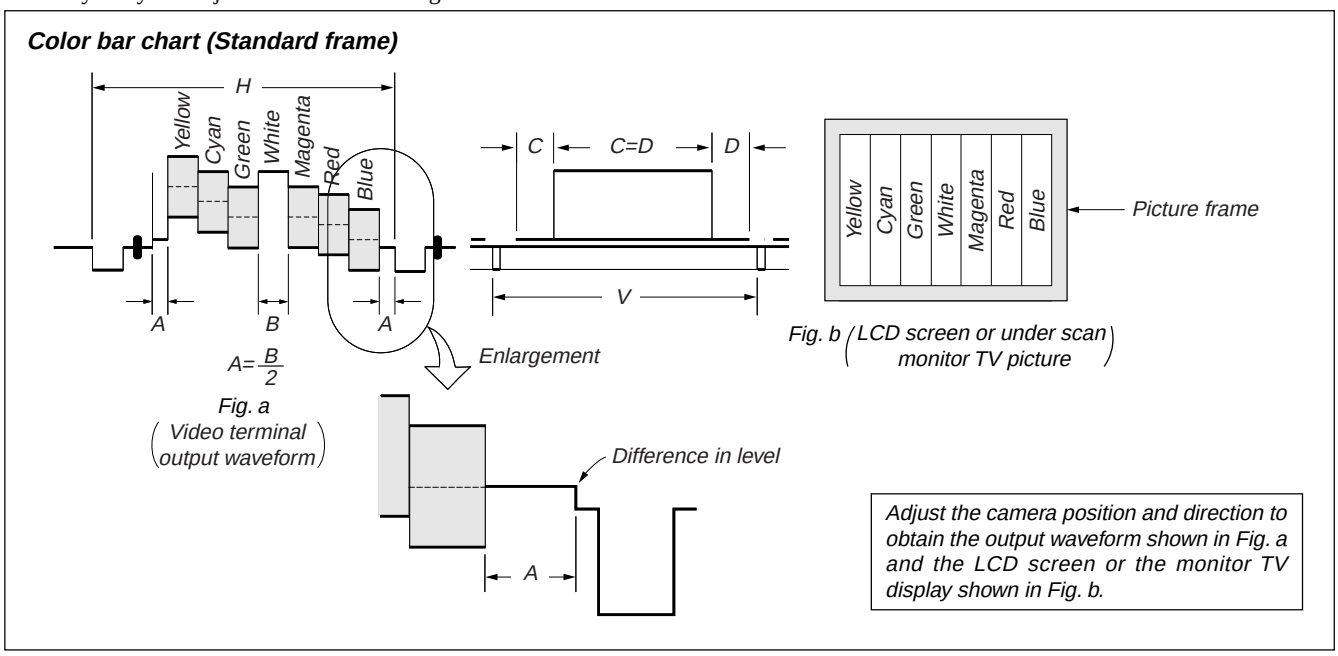


Fig.6-1-5.

3. Subjects

1) Color bar chart (Standard picture frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 6-1-5. (Standard picture frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate strobe adjustment.
If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

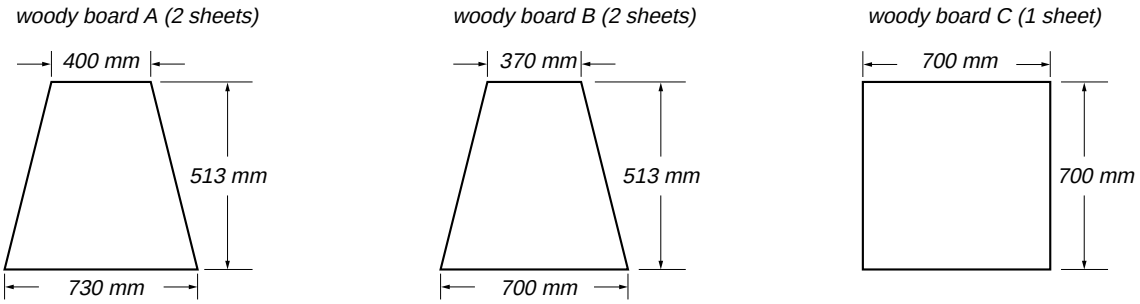


Fig. 6-1-6.

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-7.)

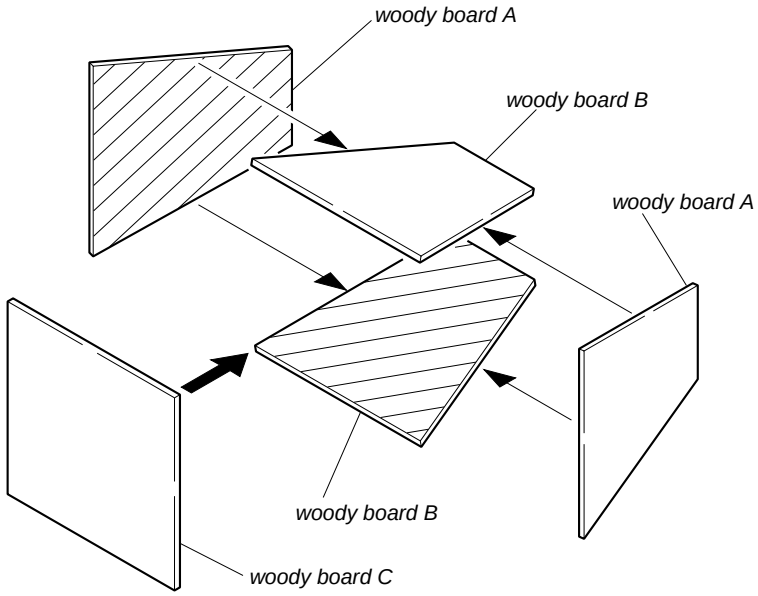


Fig. 6-1-7.

1-2. INITIALIZATION OF DATA

1-2-1. INITIALIZATION OF DATA

1. Initializing All Pages Data

By performing the following procedure, data of all the pages will be initialized.

Initializing Method:

1) Select page: 00, address: 01, and set data: 01.
2) Click [Sector Write] on the SEUS screen to display the SEUS SECTOR WRITE screen.
3) Check that the SET ID is “03”.
4) Click [All] of the ALL SELECT buttons to select all pages. (Fig. 6-1-8. Ⓐ)
5) Click [Write] to write the initializing data to the EEPROM of the camera.
6) Wait for 2 sec.
7) Click [Close] to close the SEUS PAGE EDIT screen.

Modification of 4F, 8E Page Data

If all page data have been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

1) Select page: 00, address: 01, and set data: 01.
2) Click [Page] on the SEUS screen, and input “4F” or “8E”.
3) Click [Address], and input the “Fixed data-2” address.
4) Click [Set], and input the new data.
   Note: New data for changing are not shown in the table because they are different in destination. When changing the data, copy the data built in the same model. If copy the data built in the different model, the camera may not operate.
5) Repeat steps 2 to 4 until all data of the “Fixed data-2” addresses are changed.
6) Click [Save] to write the changed data to the EEPROM of the camera.
7) Wait for 2 sec.

Processing after Completing Initializing of data

Order	Page	Address	Data	Procedure
1	20	00	29	Set the data.
2	20	01	29	Set the data.
3				Check “Receive Paket Error” is displayed on the SEUS screen.
4				Turn on the power of the camera.
5				Click [Connect] on the SEUS screen.

2. Initializing Single Page Data

By performing the following procedure, data of the page that you want to initialize will be initialized.

Initializing Method:

1) Select page: 00, address: 01, and set data: 01.
2) Click [Sector Write] on the SEUS screen to display the SEUS SECTOR WRITE screen.
3) Check that the SET ID is “03”.
4) Click [All] of the option buttons of the target page. (Fig. 6-1-8. Ⓑ)
5) Click [Write] to write the initializing data to the EEPROM of the camera.
6) Wait for 2 sec.
7) Click [Close] to close the SEUS PAGE EDIT screen.

Note: When 4F page or 8E page is initialized, perform “Modification of 4F, 8E Page Data”. (Refer to “1. Initializing All Pages Data”.)

Processing after Completing Initializing of data

Order	Page	Address	Data	Procedure
1	20	00	29	Set the data.
2	20	01	29	Set the data.
3				Check “Receive Paket Error” is displayed on the SEUS screen.
4				Turn on the power of the camera.
5				Click [Connect] on the SEUS screen.

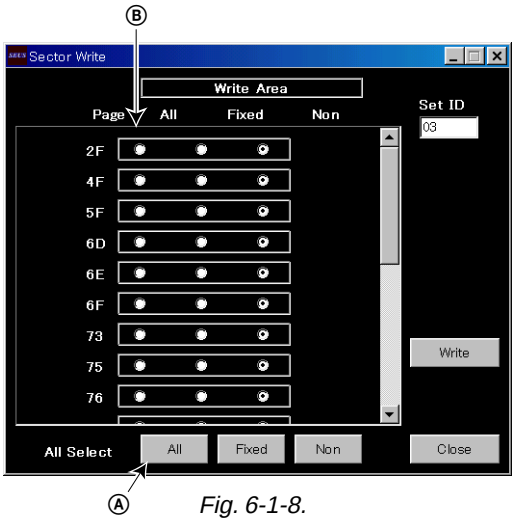


Fig. 6-1-8.

3. 2F Page Adjustment Address

Address	Initial value	Remark
23	80	Test mode

Table. 6-1-2.

4. 4F Page Adjustment Address

Address	Initial value	Remark
46		Fixed data-2
47		Fixed data-2
88		Fixed data-2
94	00	Recording counter
95	00	(Refer to “Record of Use check”
96	00	of “SERVICE MODE”(Page 6-42).)
97	00	
A1		Fixed data-2

Table. 6-1-3.

5. 6E Page Adjustment Address

Address	Initial value	Remark
04	1D	AWB 3200K standard data input
05	00	
06	07	
07	00	
08	1B	
09	00	
0A	08	
0B	00	
0C	1D	
0D	00	
0E	07	
0F	00	
10	1B	
11	00	
12	08	
13	00	
14	1C	
15	00	
16	07	
17	00	
18	1B	
19	00	
1A	08	
1B	00	
1C	00	
1D	00	
1E	00	
1F	00	
20	00	
21	00	
24	0E	AWB 5800K standard data input
25	00	
26	0E	
27	00	
28	0D	
29	00	
2A	0F	
2B	00	
2C	0E	
2D	00	
2E	0E	
2F	00	
30	0D	
31	00	
32	0F	
33	00	
34	0E	
35	00	
36	0E	
37	00	
38	0D	
39	00	
3A	0F	
3B	00	
3C	00	AWB 5800K standard data input
3D	00	
3E	00	
3F	00	
40	00	
41	00	
43	00	AWB 3200K standard data input
45	00	AWB 5800K standard data input
47	00	AWB 3200K standard data input
49	00	AWB 5800K standard data input
72	0C	Strobe adj.
73	00	
74	10	
75	00	
80	10	Linear matrix adj.
81	00	
82	00	
83	00	
84	00	
85	00	
86	00	
87	00	
88	00	
89	00	
8A	10	
8B	00	
8C	00	
8D	00	
8E	00	
8F	00	
90	00	
91	00	
92	00	
93	00	
94	10	
95	00	
96	00	
97	00	
98	00	
99	00	
9A	00	
9B	00	
9C	00	
9D	00	
9E	10	
9F	00	

Table. 6-1-4.

6. 6F Page Adjustment Address

Address	Initial value	Remark
06	40	Color shade check
07	00	
10	40	AF laser output adj.
11	FF	
12	FF	
13	FF	
14	00	
15	3A	
16	FF	
18	00	Flange back adj.
19	00	
1A	00	
1B	00	
1C	17	
1D	80	
1E	00	
1F	00	
20	19	
21	00	
22	00	
23	00	
24	26	
25	26	
26	82	
27	08	
28	03	
29	00	
2A	00	
2B	00	
2C	00	
2D	00	
2E	00	
2F	00	
30	00	
31	00	
32	00	
33	00	
34	00	
35	00	
36	00	
37	00	
38	00	
39	00	
3A	00	
3B	00	
3C	00	
3D	00	
3E	FF	
40	40	Flange back adj.
41	41	
42	42	
43	43	
44	44	
45	45	
46	46	Flange back adj.
47	47	
48	48	
49	49	
4A	4A	
4B	4B	
4C	4C	
4D	4D	
4E	4E	
4F	4F	
50	50	
51	51	
52	00	
53	00	
54	00	Auto focus illumination adj
5E	E0	IRIS reset sensor adj.
5F	80	
60	00	F No. compensation
61	00	
62	00	
63	00	
64	00	
65	30	Light value adj.
66	FE	
67	6D	
6B	FF	F No. compensation/
6C	00	Mechanical shutter adj.
6D	00	
B8	09	Mechanical shutter adj.
B9	AC	
BA	09	
BB	B4	
BC	09	
BD	BD	
BE	09	
BF	A2	
C0	09	
C1	C3	
C2	00	
C3	00	
C4	00	
C5	00	
C6	00	
C7	37	
C8	2E	
C9	21	
CA	15	
CB	15	
CC	80	
CD	88	
CE	98	
CF	90	
D0	88	
D1	00	
D2	00	

6F page

Address	Initial value	Remark
D3	00	Mechanical shutter adj.
D4	00	
D5	00	
D6	00	
D7	14	
D8	FF	Strobe adj.
D9	FF	
DA	FF	
DB	00	
DC	00	
DD	00	
DE	00	
DF	00	
E0	00	
E1	00	
E2	00	
E3	00	
E4	00	
E5	00	
E6	00	
E7	00	
E8	00	
E9	00	
EA	00	
EB	00	
EC	00	
ED	00	
EE	00	
EF	00	

Table. 6-1-5.

7. 8E Page Adjustment Address

Address	Initial value	Remark
C8		Fixed data-2

Table. 6-1-6.

8. 8F Page Adjustment Address

Address	Initial value	Remark
23	80	VCO adj. (LCD)
24	76	V COM adj. (LCD)
28	90	White balance adj. (LCD)
2A	80	
2C	72	Contrast adj. (LCD)
73	80	VCO adj. (EVF)
74	A4	V COM adj. (EVF)
75	8D	Bright adj. (EVF)
78	90	White balance adj. (EVF)
7A	80	
7C	38	Contrast adj. (EVF)
D0	80	Video output level adj.

Table. 6-1-7.

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Output Level Adjustment (SY-096 board)

Adjust the sync level of the composite video signal output.

Mode	PLAY (▶)
Signal	No signal
Measurement Point	Video terminal of AV OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	8F
Adjustment Address	D0
Specified Value	Sync level: A=286 ± 5mV (NTSC mode) A=300 ± 5mV (PAL mode) Burst level: B=286 ± 30mV (NTSC mode) B=300 ± 30mV (PAL mode)

Switch setting:

VIDEO OUT (SETUP 2)..... (NTSC mode)
..... (PAL mode)

Adjusting method:

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	60	C1		Read the data, and check it is “01”.
3	80	70	01	Set the data.
4	8F	D0		Change the data and set the sync level (A) to the specified value.
5				Check that the burst level (B) satisfies the specified value.
6	80	70	00	Write the data.
7				Save the data.
8				Wait for 2 sec.
9	00	01	00	Set the data.

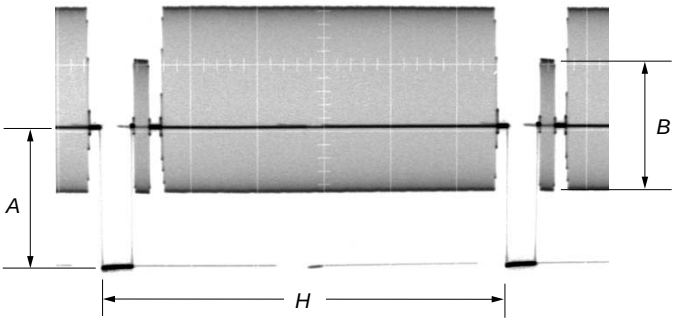


Fig. 6-1-9.

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

1. Data Setting during Camera System Adjustments

Perform the following data setting before the camera system adjustments.

Note: When the power is turned off, some data settings will be released. So perform this data setting again when the power is turned off.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	4F	B7	01	Set the data.
3	2F	23	11	Set the data.
4	60	C1		Read the data, and check it is "02".
5	80	70	01	Set the data.
6	60	6C	01	Set the data.
7	60	2C	01	Set the data.

After completing the camera system adjustments, release the data setting.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	4F	B7	00	Set the data.
3	2F	23	80	Set the data.
4				Save the data.
5				Wait for 2 sec.
6	00	01	00	Set the data.

2. IRIS Reset Sensor Adjustment

Measuring the iris reset sensor output voltage, and compensate the dispersion of the reset position detecting voltage.

Mode	STILL (P AUTO) (**P**)
Subject	Clear chart
Measurement Point	Data of page 6F, address: 5E, 5F, 6B
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	5E, 5F
Specified Value1	00
Specified Value2	80 to FF
Specified Value3	7F to 81

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the ZOOM is WIDE end.
3	60	01	6F	Set the data.
4				Wait for 2 sec.
5	60	02		Read the data, and check it is "01". (Note2)
6	6F	6B		Read the data, and check it satisfies the specified value 1.
7	6F	5E		Read the data, and check it satisfies the specified value 2.
8	6F	5F		Read the data, and check it satisfies the specified value 3.

Note2: The adjustment data will be automatically input to page: 6F, address: 5E, 5F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				Perform "Flange Back Adjustment".
3				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

3. Flange Back Adjustment

To adjust the flange back, compensate the dispersion of the zoom position A/D value at WIDE end and TELE end.

Mode	STILL (P AUTO) (**P**)
Subject	Arbitrary
Measurement Point	Data of page: 6F, address: 24, 25, 3E
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	18 to 3E, 40 to 53
Specified value1	00
Specified value2	0A to 40

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	00	37	Set the data.
3	60	01	37	Set the data.
4				Wait for 2 sec.
5	60	02		Read the data, and check it is "01".
6	60	00	00	Set the data.
7	60	01	00	Set the data.
8				Set the ZOOM to the WIDE end.
9	60	01	13	Set the data.
10				Wait for 1 sec.
11	60	01	B1	Set the data.
12				Wait for 1 sec.
13	60	02		Read the data, and check it is "01". (Note2)
14				Set the ZOOM to the TELE end.
15	60	01	13	Set the data.
16				Wait for 1 sec.
17	60	01	B3	Set the data.
18				Wait for 1 sec.
19	60	02		Read the data, and check it is "01". (Note2)
20	60	01	00	Set the data.
21	6F	3E		Read the data, and check it satisfies the specified value 1.
22	6F	24		Read the data, and check it satisfies the specified value 2.
23	6F	25		Read the data, and check it satisfies the specified value 2.

Note2: The adjustment data will be automatically input to page: 6F, address: 18 to 3E, 40 to 53

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1				Perform "Flange Back Check".
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

4. Flange Back Check

Mode	STILL (P AUTO) (**P**)
Subject	Siemens star (1.0m from the front of the lens) (Luminance : 200 to 400 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value1	The lens is focused.
Specified Value2	Below 8% of diagonal length of the TV monitor (Note)

Note: Below 40mm when a 21 inches TV monitor is used.

Checking method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Place the siemens star 1.0m from the front of the lens.
3	60	2C	00	Set the data.
4	60	8C	30	Set the data.
5				Shoot the Siemens star with the zoom TELE end (200).
6				Check that center of the Siemens star is located in the center of the TV monitor screen.
7				Check that the lens is focused.
8	60	2C	01	Set the data.
9				For each of the zoom positions 135, 100, 70, 50 and 35, check that the lens is focused.
10				Shoot the Siemens star with the zoom WIDE end (28).
11				Check that the lens is focused.
12				Check that distance between the center of the Siemens star and the center of the TV monitor screen satisfies the specified value2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	8C	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

5. Picture Frame Setting

Mode	STILL (P AUTO) (**P**)
Subject	Color bar chart and clear chart (Standard picture frame) About 20cm from the front of the lens
Measurement Point	Video terminal of A/V OUT jack
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=C=B/2, E=F

Switch setting:

ZOOM ..... WIDE end

Setting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Shoot the color bar chart with the zoom WIDE end.
3				Adjust the direction and distance between the pattern box and camera, and set the picture frame to the specified position.
4				Adjust the focus.
5				Remove the color bar chart and set the clear chart.
6				Check that the whole of the screen is white. If not, adjust the direction and distance slightly.
7	10	44		Read the data, and this data named YH.
8	10	45		Read the data, and this data named YL.
9				Perform the following adjustments.

How to reset the focus when it deviated:

If the focus deviated due to some reason reset it in the following method.

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	90	00	Set the data.
3	60	91	00	Set the data.
4	60	92	YL	Set the data. (Note)
5	60	93	YH	Set the data. (Note)
6	60	01	79	Set the data.
7				Wait until the movement of the lens stops.
8	60	07		Read the data, and check it is "01".
9	60	01	00	Set the data.

Note: YH and YL are the data read in the "Setting method".

Check on an oscilloscope

1. Horizontal period

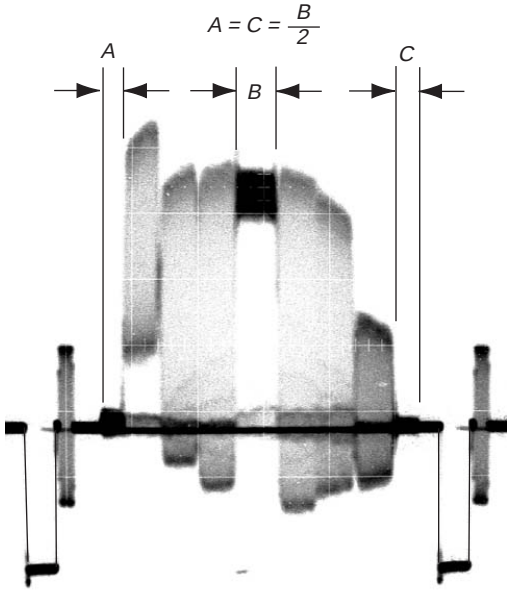


Fig. 6-1-10.

2. Vertical period

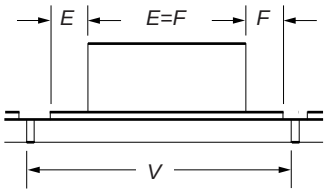


Fig. 6-1-11.

Check on the monitor TV (Underscanned mode)

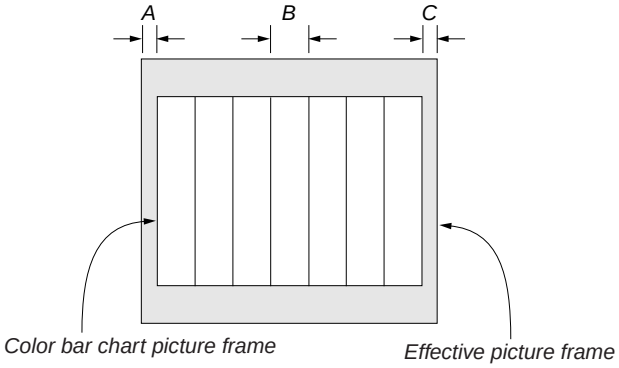


Fig. 6-1-12.

6. Color Shade Check

Data contents will be released in Supplement.

7. F No. Compensation

Adjusted the dispersion of the iris to every to every F number, and compensate the exposure.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 6F, address: 6B
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	60 to 64, 6B to 6D
Specified value	00

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	01	BB	Set the data.
4				Wait for 20 sec.
5	60	02		Read the data, and check it is "01". (Note2)
6	6F	6B		Read the data, and check it satisfies the specified value.

Note2: The adjustment data will be automatically input to page: 6F, address: 60 to 64, 6B to 6D.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

8. Mechanical Shutter Adjustment

Adjust the dispersion of the opening/closing time and the closing loss rate of the mechanical shutter. and compensate the exposure.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 6F, address: 6B
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	6B to 6D, B8 to D7
Specified value	00

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	01	AD	Set the data.
4				Wait until the movement of the shutter stops.
5	60	02		Read the data, and check it is "01". (Note2)
6	6F	6B		Read the data, and check it satisfies the specified value.

Note2: The adjustment data will be automatically input to page: 6F, address: 6B to 6D, B8 to D7.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

9. Light Value Adjustment

Adjust the standard LV value.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 10, address: 0C, 0D
Measuring Instrument	Data of page: 6F, address: 65
Adjustment Page	6F
Adjustment Address	65 to 67
Specified value1	0FE0 to 1020
Specified value2	30 to 50

Note1: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	01	0D	Set the data.
4				Wait for 2 sec.
5	60	02		Read the data, and check it is "01". (Note2)
6	10	0C		Read the data, and this data is named D_{0C}.
7	10	0D		Read the data, and this data is named D_{0D}.
8				Calculate D_{LV} using the following equation (Hexadecimal calculation) $D_{LV} = D_{0C} \times 100 + D_{0D}$
10				Check that D_{LV} satisfies the specified value1.
11	6F	65		Read the data, and check it satisfies the specified value2.

Note2: The adjustment data will be automatically input to page: 6F, address: 65 to 67.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

10. Linear Matrix Adjustment

Data contents will be released in Supplement.

11. Auto White Balance 3200K Standard Data Input

Data contents will be released in Supplement.

12. Auto White Balance 5800K Standard Data Input

Data contents will be released in Supplement.

13. Auto White Balance 5800K Check

Data contents will be released in Supplement.

14. Auto White Balance 3200K Check

Data contents will be released in Supplement.

15. Color Reproduction Check (CAP-Normal mode)

Adjust the color reproduction of yellow, red, blue and cyan so that proper color reproduction is produced.

Mode	STILL (P AUTO) (**P**)
Subject	Color bar chart (Standard picture frame)
Measurement Point	Video terminal of A/V OUT jack
Measuring Instrument	NTSC vectorscope
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Note: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end
VIDEO OUT (SET UP setting) ..... NTSC

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	7A	18		Read the data, and memorize it.
4	7A	18	00	Set the data.
5	60	37	39	Set the data.
6	60	01	AB	Set the data.
7				Wait for 1 sec.
8				Adjust the GAIN and PHASE of the vectorscope so that the burst luminance point is set at the specified position.
9				Check that each center of all color luminance points is set in each color reproduction frame.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	7A	18		Set the data memorized at "Adjusting method".
3				Wait for 1 sec.
4	60	37		Read the data, and check it is "00".
5				Perform "Color Reproduction Check". If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

For CAP-Normal mode

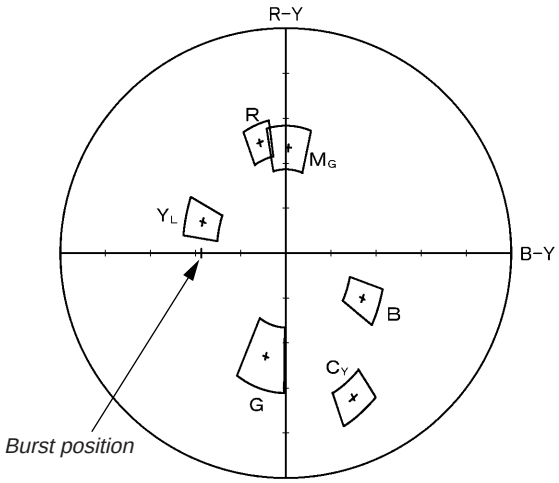


Fig. 6-1-13.

16. Color Reproduction Check (CAP-Real mode)

Adjust the color reproduction of yellow, red, blue and cyan so that proper color reproduction is produced.

Mode	STILL(P AUTO) (**P**)
Subject	Color bar chart (Standard picture frame)
Measurement Point	Video terminal of A/V OUT jack
Measuring Instrument	NTSC vectorscope
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Note: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end
VIDEO OUT (SET UP setting) ..... NTSC

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	60	57	01	Set the data.
4	7A	24		Read the data, and memorize it.
5	7A	24	00	Set the data.
6	60	37	39	Set the data.
7	60	01	AB	Set the data.
8				Wait for 1 sec.
9				Adjust the GAIN and PHASE of the vectorscope so that the burst luminance point is set at the specified position.
10				Check that each center of all color luminance points is set in each color reproduction frame.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	7A	24		Set the data memorized at "Adjusting method".
3	60	57	00	Set the data.
4				Wait for 1 sec.
5	60	37		Read the data, and check it is "00".
6				Perform the next adjustment. If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

For CAP-Normal mode

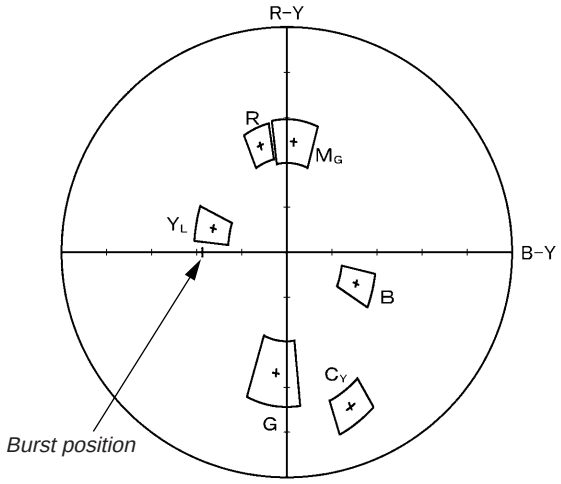


Fig. 6-1-14.

17. CCD Linearity Check

Data picking is done to keep output linearity of the CCD imager, even if the input level of CCD imager changes.

Mode	STILL(P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 10, address: 80, 81, 82, 83
Measuring Instrument	
Specified value1	97 to 103 (Note1)
Specified value2	94 to 106 (Note1)
Specified value3	92 to 108 (Note1)

Note1: Decimal number.
Note2: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.
Note3: For the bit values, refer to "6-4. SERVICE MODE", "2-2. 2. Bit value discrimination".

Switch setting:

ZOOM ..... WIDE end

Preparation:

Order	Page	Address	Data	Procedure
1				Install the clear chart.
2				Check that "1. Data Setting during Camera System Adjustments" is performed.
3				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
4	75	09		Read the data, and memorize it.
5	75	09	04	Set the data.
6	77	F6		Read the data, and memorize it.
7	77	F6		Set Bit2 of the data to "0". (Note3)
8	77	F7		Read the data, and memorize it.
9	77	F7		Set Bit6 of the data to "1". (Note3)
10	77	F2		Read the data, and memorize it.
11	77	F2		Set Bit6 of the data to "0". (Note3)
12	77	F2		Set Bit0 of the data to "0". (Note3)
13	77	72		Read the data, and memorize it.
14	60	14	90	Set the data.
15	60	12	9F	Set the data.
16	75	17		Read the data, and memorize it.
17	75	17	AA	Set the data.
18	75	18		Read the data, and memorize it.
19	75	18	00	Set the data.
20	75	19		Read the data, and memorize it.
21	75	19	E8	Set the data.
22	75	1A		Read the data, and memorize it.
23	75	1A	54	Set the data.
24	75	1B		Read the data, and memorize it.
25	75	1B	74	Set the data.
26				Wait for 2 sec.

Checking method:

Order	Page	Address	Data	Procedure
1				Perform "Preparation" before this adjustment.
2	60	01	F9	Set the data.
3				Wait for 2 sec.
4	60	E1		Read the data, and check it is "08".
5	10	80		Read the data, and this data is named D_{80}.
6	10	81		Read the data, and this data is named D_{81}.
7				Calculate D_{RG0} using the following equation (Hexadecimal calculation) $D_{RG0} = D_{80} \times 100 + D_{81}$
8	10	82		Read the data, and this data is named D_{82}.
9	10	83		Read the data, and this data is named D_{83}.
10				Calculate D_{BG0} using the following equation (Hexadecimal calculation) $D_{BG0} = D_{82} \times 100 + D_{83}$
11	60	01	00	Set the data.
12	60	E1	00	Set the data.
13	77	72	70	Set the data.
14				Wait for 2 sec.
15	60	01	F9	Set the data.
16				Wait for 2 sec.
17	60	E1		Read the data, and check it is "08".
18	10	80		Read the data, and this data is named D_{80}.
19	10	81		Read the data, and this data is named D_{81}.
20				Calculate D_{RG1} using the following equation (Hexadecimal calculation) $D_{RG1} = D_{80} \times 100 + D_{81}$
21	10	82		Read the data, and this data is named D_{82}.
22	10	83		Read the data, and this data is named D_{83}.
23				Calculate D_{BG1} using the following equation (Hexadecimal calculation) $D_{BG1} = D_{82} \times 100 + D_{83}$
24	60	01	00	Set the data.
25	60	E1	00	Set the data.
26	60	12	A2	Set the data.
27	77	72	48	Set the data.
28				Wait for 2 sec.
29	60	01	F9	Set the data.
30				Wait for 2 sec.
31	60	E1		Read the data, and check it is "08".
32	10	80		Read the data, and this data is named D_{80}.
33	10	81		Read the data, and this data is named D_{81}.

Order	Page	Address	Data	Procedure
34				Calculate D_{RG2} using the following equation (Hexadecimal calculation) $D_{RG2} = D_{80} \times 100 + D_{81}$
35	10	82		Read the data, and this data is named D_{82}.
36	10	83		Read the data, and this data is named D_{83}.
37				Calculate D_{BG2} using the following equation (Hexadecimal calculation) $D_{BG2} = D_{82} \times 100 + D_{83}$
38	60	01	00	Set the data.
39	60	E1	00	Set the data.
40	77	72	0C	Set the data.
41				Wait for 2 sec.
42	60	01	F9	Set the data.
43				Wait for 2 sec.
44	60	E1		Read the data, and check it is “08”.
45	10	80		Read the data, and this data is named D_{80}.
46	10	81		Read the data, and this data is named D_{81}.
47				Calculate D_{RG3} using the following equation (Hexadecimal calculation) $D_{RG3} = D_{80} \times 100 + D_{81}$
48	10	82		Read the data, and this data is named D_{82}.
49	10	83		Read the data, and this data is named D_{83}.
50				Calculate D_{BG3} using the following equation (Hexadecimal calculation) $D_{BG3} = D_{82} \times 100 + D_{83}$
51	60	01	00	Set the data.
52	60	E1	00	Set the data.
53	77	72	06	Set the data.
54				Wait for 2 sec.
55	60	01	F9	Set the data.
56				Wait for 2 sec.
57	60	E1		Read the data, and check it is “08”.
58	10	80		Read the data, and this data is named D_{80}.
59	10	81		Read the data, and this data is named D_{81}.
60				Calculate D_{RG4} using the following equation (Hexadecimal calculation) $D_{RG4} = D_{80} \times 100 + D_{81}$
61	10	82		Read the data, and this data is named D_{82}.
62	10	83		Read the data, and this data is named D_{83}.
63				Calculate D_{BG4} using the following equation (Hexadecimal calculation) $D_{BG4} = D_{82} \times 100 + D_{83}$
64				Convert D_{RG0}, D_{BG0}, D_{RG1}, D_{BG1}, D_{RG2}, D_{BG2}, D_{RG3}, D_{BG3}, D_{RG4} and D_{BG4} to decimal number, and obtain D_{RG0}', D_{BG0}', D_{RG1}', D_{BG1}', D_{RG2}', D_{BG2}', D_{RG3}', D_{BG3}', D_{RG4}' and D_{BG4}'.
65				Calculate R/G ratio (1), B/G ratio (1), R/G ratio (2), B/G ratio (2), R/G ratio (3), B/G ratio (3), R/G ratio (4) and B/G ratio (4), using the following equations (Decimal calculation) R/G ratio (1) = (D_{RG1}'/D_{RG0}') × 100 B/G ratio (1) = (D_{BG1}'/D_{BG0}') × 100 R/G ratio (2) = (D_{RG2}'/D_{RG0}') × 100 B/G ratio (2) = (D_{BG2}'/D_{BG0}') × 100 R/G ratio (3) = (D_{RG3}'/D_{RG0}') × 100 B/G ratio (3) = (D_{BG3}'/D_{BG0}') × 100 R/G ratio (4) = (D_{RG4}'/D_{RG0}') × 100 B/G ratio (4) = (D_{BG4}'/D_{BG0}') × 100
				Linearity check of very high luminance
66				Check that R/G ratio (1) satisfies the specified value 1. (Decimal number)
67				Check that B/G ratio (1) satisfies the specified value 1. (Decimal number)
				Linearity check of high luminance
68				Check that R/G ratio (2) satisfies the specified value 1. (Decimal number)
69				Check that B/G ratio (2) satisfies the specified value 1. (Decimal number)
				Linearity check of low luminance
70				Check that R/G ratio (3) satisfies the specified value 2. (Decimal number)
71				Check that B/G ratio (3) satisfies the specified value 2. (Decimal number)
				Linearity check of very low luminance
72				Check that R/G ratio (4) satisfies the specified value 3. (Decimal number)
73				Check that B/G ratio (4) satisfies the specified value 3. (Decimal number)

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	60	E1	00	Set the data.
3	60	12	00	Set the data.
4	60	14	00	Set the data.
5	75	09		Set the data memorized at “Preparation”.
6	77	F6		Set the data memorized at “Preparation”.
7	77	F7		Set the data memorized at “Preparation”.
8	77	F2		Set the data memorized at “Preparation”.
9	77	72		Set the data memorized at “Preparation”.
10	75	17		Set the data memorized at “Preparation”.
11	75	18		Set the data memorized at “Preparation”.
12	75	19		Set the data memorized at “Preparation”.
13	75	1A		Set the data memorized at “Preparation”.
14	75	1B		Set the data memorized at “Preparation”.
15				Save the data.
16				Wait for 2 sec.
17				Perform next adjustments. If finish the camera system adjustments, release the data setting. (See “1. Data Setting during Camera System Adjustments”.)

18. CCD White Defect Compensation Check

The positions of the white defective pixel are detected, and check that the pixels can be corrected.

Mode	STILL (P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 60, address: 55
Measuring Instrument	
Specified value 1	00 to 7F
Specified value 2	00

Note: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	7D	64		Read the data, and memorize the data.
4	7D	64	1E	Set the data.
5	7D	69		Read the data, and memorize the data.
6	7D	69	18	Set the data.
7	60	01	8B	Set the data.
8				Wait for about 20 sec.
9	60	02		Read the data, and check it is "01".
10	60	55		Read the data, and check it satisfies the specified value 1.
11	60	01	00	Set the data.
12				Wait for 1 sec.
13	7D	64	0F	Set the data.
14	7D	69	60	Set the data.
15	60	01	87	Set the data.
16				Wait for about 20 sec.
17	60	02		Read the data, and check it is "01".
18	60	55		Read the data, and check it satisfies the specified value 2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	7D	64		Set the data memorized at "Adjusting method".
3	7D	69		Set the data memorized at "Adjusting method".
4				Perform next adjustments. If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

19. CCD Black Defect Compensation Check

The positions of the black defective pixel are detected, and check that the pixels can be corrected. And confirms that there is no trash in the surface of the CCD imager, the optical filter and the inside of the lens.

Mode	STILL (P AUTO) (**P**)
Subject	Clear chart (Standard picture frame)
Measurement Point	Data of page: 60, address: 55
Measuring Instrument	
Specified value 1	00 to 30
Specified value 2	00

Note1: Check that there are no dust, no dirt and no reflection on the clear chart.

Note2: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and Set data: 00.

Switch setting:

ZOOM ..... 70 (mm)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2				Check the picture frame. If deviated, perform "5. Picture Frame Setting".
3	7D	65	4C	Set the data.
4	60	2C	01	Set the data.
5				Rotate ZOOM ring and set the ZOOM to "70" position.
6	60	92	00	Set the data.
7	60	93	00	Set the data.
8	60	01	79	Set the data.
9	60	30	08	Set the data.
10				Wait for 1 sec.
11	60	07		Read the data, and check it is "01".
12				Check that the whole of the screen is white.
13	60	01	8D	Set the data.
14				Wait for about 35 sec.
15	60	02		Read the data, and check it is "01".
16	60	55		Read the data, and check it satisfies the specified value 1. If the data is "00", proceed to "Processing after Completing Adjustments"
17	60	01	00	Set the data.
18				Wait for 1 sec.
19	7D	65	5A	Set the data.
20	60	01	89	Set the data.
21				Wait for about 35 sec.
22	60	02		Read the data, and check it is "01".
23	60	55		Read the data, and check it satisfies the specified value 2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	60	2C	00	Set the data.
3	60	30	00	Set the data.
4	7D	65	4C	Set the data.
5				Set the ZOOM to WIDE end.
6				Perform next adjustments. If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

20. Strobe Adjustment

Adjust the light level and white balance when the strobe light flashes.

Mode	STILL (P AUTO) (**P**)	
Subject	Background paper (J-2501-130-A) (50cm from the front of the lens)	
Measurement Point	Data of page 6F, address: EA, EC, EE	
Measuring Instrument	Data of page 6E, address: 4F	
Adjustment Page	6F	6E
Adjustment Address	D8 to EF	72 to 75
Specified Value1	03 to 0A	
Specified Value2	00	

Note1: Perform this adjustment in the dark room or use the flash adjustment box.
Note2: Any light other than the strobe light should not light up the plate.
Note3: After the power is turned on, this adjustment can be done only once.
Note4: If the data of page: 60, address: 02 is "01", select page: 60, address: 01, and set data: 00.

Switch setting:

ZOOM ..... WIDE end
FLASH ..... OPEN

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	2C	01	Set the data.
3	60	92	FF	Set the data.
4	60	93	FF	Set the data.
5	60	6C	01	Set the data.
6	60	01	79	Set the data.
7				Wait for 5 sec.
8	60	07		Read the data, and check it is "01".
9	60	01	67	Set the data.
10				Check the flashing.
11	60	02		Read the data, and check it is "01". (Note5)
12	6F	D8		Read the data, and check it is "00".
13	6F	E8		Read the data, and check it satisfies the specified value 1.
14	60	01	00	Set the data.
15				Wait for 5 sec.
16	60	ED		Read the data, and check it is "02".
17	60	01	67	Set the data.
18				Check the flashing.
19	60	02		Read the data, and check it is "01". (Note5)
20	6F	D8		Read the data, and check it is "00".
21	60	01	00	Set the data.
22				Wait for 5 sec.
23	60	ED		Read the data, and check it is "02".
24	60	01	67	Set the data.
25				Check the flashing.
26	60	02		Read the data, and check it is "01". (Note5)
27	6F	D8		Read the data, and check it is "00".
28	60	01	00	Set the data.
29				Wait for 5 sec.
30	60	ED		Read the data, and check it is "02".
31	60	01	67	Set the data.
32				Check the flashing.
33	60	02		Read the data, and check it is "01". (Note5)
34	6F	D8		Read the data, and check it is "00".
35	60	01	00	Set the data.
36				Wait for 5 sec.
37	60	ED		Read the data, and check it is "02".
38	6E	4F	FF	Set the data.
39	60	01	B9	Set the data.
40				Check the flashing.
41	60	02		Read the data, and check it is "01". (Note5)
42	6F	D8		Read the data, and check it is "00".
43	60	01	00	Set the data.
44				Wait for 5 sec.
45	60	ED		Read the data, and check it is "02".
46	60	01	E7	Set the data.
47				Check the flashing.
48	60	02		Read the data, and check it is "01".
49	6F	D8		Read the data, and check it is "00".
50	6F	EA		Read the data, and check it satisfies the specified value 1.
51	6F	EC		Read the data, and check it satisfies the specified value 1.
52	6F	EE		Read the data, and check it satisfies the specified value 1.
53	6E	4F		Read the data, and check it satisfies the specified value 2.

Note5: The adjustment data will be automatically input to page: 6F, address: B, D8 to EF, and to page: 6E, address: 72 to 75.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Set the data.
2	60	2C	00	Set the data.
3	60	6C	00	Set the data.
4	60	92	00	Set the data.
5	60	93	00	Set the data.
6				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

21. AF Laser Output Adjustment

Adjust the AF laser output power.

Mode	STILL (P AUTO) (**P**)
Subject	Background paper (J-2501-130-A). (50cm from the front of the lens)
Measurement Point	Data of page 6F, address: 13
Measuring Instrument	
Adjustment Page	6F
Adjustment Address	10 to 16
Specified Value	00

Note1: Perform this adjustment in the dark room or use the flash adjustment box.
Note2: Any light other than the strobe light should not light up the plate.

Switch setting:

ZOOM ..... WIDE end

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	6F	10	30	Set the data.
3	6F	15	55	Set the data.
4	60	01	AF	Write the data.
5				Check that the AF laser is lit.
6				Wait for 8 sec.
7	60	02		Read the data, and check it is "01". (Note3)
8	6F	13		Read the data, and check it satisfies the specified value 1.

Note3: The adjustment data will be automatically input to page: 6F, address: 10 to 16.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	01	00	Write the data.
2				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

22. AF Laser Axis Check

Check the AF laser optical axis.

Mode	STILL(P AUTO) (**P**)
Subject	Background paper (J-2501-130-A) (1m from the front of the lens)
Measurement Point	Monitor TV (under scan)
Measuring Instrument	
Specified Value	All hologram patterns are within the inspection frame.

Note1: Perform this adjustment in the dark room.

Preparations:

1) Take a copy of the AF Laser axis frame with a clear sheet. (Reduce or enlarge the frame in same size as the effective picture frame of the monitor TV.)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during Camera System Adjustments" is performed.
2	60	30	06	Set the data.
3	60	2C	01	Set the data.
4				Set the ZOOM to WIDE end.
5	60	92	00	Set the data.
6	60	93	40	Set the data.
7	60	01	79	Write the data.
8				Wait for 3 sec.
9	60	07		Read the data, and check it is "01".
10	60	01	00	Write the data.
11	60	22	05	Set the data.
12	60	23	0A	Set the data.
13				Check that all hologram patterns are within the inspection frame. (Fig. 6-1-15.)
14				Set the ZOOM to TELE end.
15	60	92	00	Set the data.
16	60	93	40	Set the data.
17	60	01	79	Write the data.
18				Wait for 3 sec.
19	60	07		Read the data, and check it is "01".
20	60	14	8A	Set the data.
21	60	01	00	Write the data.
22				Check that all hologram patterns are not unfocused.

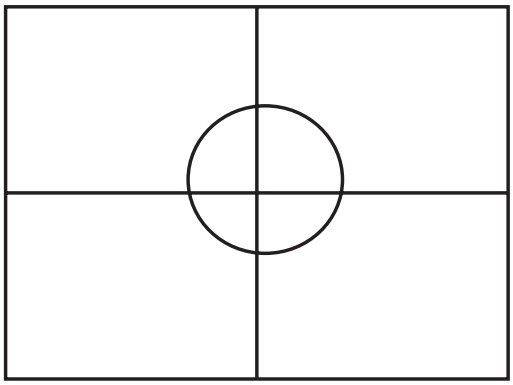


Fig. 6-1-15.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	60	14	00	Set the data.
2	60	22	00	Set the data.
3	60	23	00	Set the data.
4	60	2C	00	Set the data.
5	60	30	00	Set the data.
6	60	92	00	Set the data.
7	60	93	00	Set the data.
8				If finish the camera system adjustments, release the data setting. (See "1. Data Setting during Camera System Adjustments".)

1-5. COLOR ELECTRONIC VIEWFINDER ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: If you perform the adjustments with FINDER/LCD switch (Control switch block (UNDER)) removed, set the following data.
1) Select page: 80, address: 10, and set data: 1A.
2) Select page: 80, address: 11, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 80, address: 10, and set data: FF.
2) Select page: 80, address: 11, and set data: 00.

Switch setting:

FINDER/LCD ..... FINDER

1. Data Setting during EVF System Adjustments

Perform the following data setting before the EVF system adjustments.

Note: When the power is turned off, some data settings will be released. So perform this data setting again when the power is turned off.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	80	70	01	Set the data.

After completing the EVF system adjustments, release the data setting.

Order	Page	Address	Data	Procedure
1	80	70	00	Set the data.
2				Save the data.
3				Wait for 2 sec.
4	00	01	00	Set the data.

2. EVF Initial Data Input

Mode	PLAY (▶)
Signal	Arbitrary
Adjustment Page	8F
Adjustment Address	70, 71, 73 to 78, 7A, 7C

Adjusting method:

1) Select page: 00, address: 01, and set data: 01.
2) Select page: 8F, and set the data in the following table.
3) Save the data.
4) Wait for 2sec.
5) Select page: 00, address: 01, and set data: 00.

Address	Data	Remark
70	53	Fixed data
71	96	Fixed data
73	80	VCO adj.
74	A4	V COM adj.
75	8D	Bright adj.
76	40	Fixed data
77	00	Fixed data
78	90	White balance adj.
7A	80	White balance adj.
7C	38	Contrast adj.

3. VCO Adjustment (SY-096 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	73
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	84	2F	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	01	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

4. Bright Adjustment (SY-096 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	75
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	88	9F	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	03	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

5. Contrast Adjustment (SY-096 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	7C
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	89	44	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	05	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

6. V COM Adjustment (SY-096 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	74
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	8F	8C	03	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	80	Set the data.
6	80	00	07	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

7. White Balance Adjustment (SY-096 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	78, 7A
Specified Value	The EVF screen should not be colored.

Note1: Use the AC power adaptor during this adjustment.
Note2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC902

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during EVF System Adjustments" is performed.
2	80	71	52	Set the data.
3	80	89	02	Set the data.
4	8F	78	90	Set the data.
5	8F	7A	80	Set the data.
6	8F	78		Check that the LCD screen is not colored. If not colored, proceed to step 10.
7	8F	78		Change the data so that the LCD screen is not colored.
8	8F	7A		Change the data so that the LCD screen is not colored.
9	8F	7A		If the LCD screen is colored, repeat steps 7 to 9.
10	80	71	FF	Set the data.
11				Save the data.
12				Wait for 2 sec.
13				If finish the EVF system adjustments, release the data setting. (See "1. Data Setting during EVF System Adjustments".)

1-6. LCD SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: If you perform the adjustments with FINDER/LCD switch (Control switch block (UNDER)) removed, set the following data.
1) Select page: 80, address: 10, and set data: 1A.
2) Select page: 80, address: 11, and set data: 00.
Reset the data after completing adjustment.
1) Select page: 80, address: 10, and set data: FF.
2) Select page: 80, address: 11, and set data: 00.

Switch setting:

FINDER/LCD ..... LCD

1. Data Setting during LCD System Adjustments

Perform the following data setting before the LCD system adjustments.

Note1: When the power is turned off, some data settings will be released. So perform this data setting again when the power is turned off.

Order	Page	Address	Data	Procedure
1	00	01	01	Set the data.
2	80	70	01	Set the data.

After completing the LCD system adjustments, release the data setting.

Order	Page	Address	Data	Procedure
1	80	70	00	Set the data.
2				Save the data.
3				Wait for 2 sec.
4	00	01	00	Set the data.

2. LCD Initial Data Input

Mode	PLAY (▶)
Signal	Arbitrary
Adjustment Page	8F
Adjustment Address	20, 21, 23 to 28, 2A, 2C

Adjusting method:

1) Select page: 00, address: 01, and set data: 01.
2) Select page: 8F, and write the data in the following table.
3) Save the data.
4) Wait for 2sec.
5) Select page: 00, address: 01, and set data: 00.

Address	Data	Remark
20	A5	Fixed data
21	19	Fixed data
23	80	VCO adj.
24	76	VCOM adj.
25	84	Fixed data
26	00	Fixed data
27	63	Fixed data
28	90	White balance adj.
2A	80	White balance adj.
2C	72	Contrast adj.

3. VCO Adjustment (SY-096 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	23
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	8F	34	1D	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	00	Set the data.
6	80	00	01	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

4. Contrast Adjustment (SY-096 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Data of page: 80, address: 02
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	2C
Specified Value	01

Note1: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	8F	39	80	Set the data.
3	80	00	00	Set the data.
4	80	02	00	Set the data.
5	80	01	01	Set the data.
6	80	00	05	Set the data.
7	80	02		Read the data, and check it is "01". (Note2)
8				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

Note2: If the data is other than "01", adjustment has errors. See the following table.

Data of page: 80, address: 02	Contents of adjustment error
01	Normally finished
10	Reached an upper limit
20	Reached a lower limit
30	Time out
40	Out of adjustment range
50	Adjustment is impossible

5. V COM Adjustment (SY-096 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	24
Specified Value	The brightness difference between the section A and section B is minimum.

Note: A memory stick must be inserted.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	80	71	76	Set the data.
3	8F	41	23	Set the data.
4	8F	24		Change the data so that the brightness of the section A and that of the section B is equal.
5	80	71	FF	Set the data.
6	8F	41	21	Set the data.
7				Save the data.
8				Wait for 2 sec.
9				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

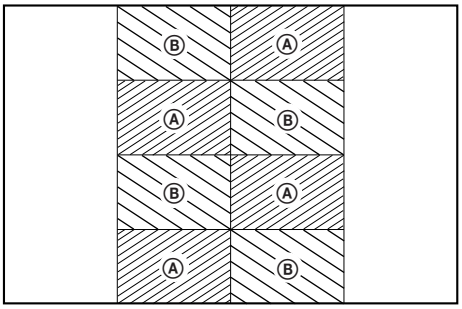


Fig. 6-1-16.

6. White Balance Adjustment (SY-096 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY (▶)
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	8F
Adjustment Address	28, 2A
Specified Value	The LCD screen should not be colored.

Note1: Use the AC power adaptor during this adjustment.
Note2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC801

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that "1. Data Setting during LCD System Adjustments" is performed.
2	80	71	52	Set the data.
3	80	84	02	Set the data.
4	8F	28	90	Set the data.
5	8F	2A	80	Set the data.
6	8F	28		Check that the LCD screen is not colored. If not colored, proceed to step 10.
7	8F	28		Change the data so that the LCD screen is not colored.
8	8F	2A		Change the data so that the LCD screen is not colored.
9	8F	2A		If the LCD screen is colored, repeat steps 7 to 9.
10	80	71	FF	Set the data.
11				Save the data.
12				Wait for 2 sec.
13				If finish the LCD system adjustments, release the data setting. (See "1. Data Setting during LCD System Adjustments".)

6-2. SERVICE MODE

2-1. APPLICATION FOR ADJUSTMENT (SEUS)

The application for adjustment (SEUS) is used for changing the calculation coefficient in signal processing, EVR data, etc. The SEUS performs bi-directional communication between the personal computer (PC) and the unit using the USB signal. The resultant data of this bi-directional communication is written in the non-volatile memory.

2-1-1. Using Method of SEUS

Switch setting:

MS/CF ..... MS (Memory stick)

1. Connection

1) Connect the HASP key to the USB port of the PC.
2) Connect the camera to another USB port of the PC.
3) Insert a memory stick to the camera.
4) Confirm that the camera starts in the USB mode.
5) Start the SEUS on the PC.
6) Click [Connect] on the SEUS screen. If the connection is normal, the SEUS screen will be as shown in Fig. 6-2-1, indicating the "connected" state.

Note: The SEUS will go in "disconnect" state, if the camera is turned off (for instance, by resetting the unit). In such a case, click [Connect] on the SEUS screen to restore the "connected" state.

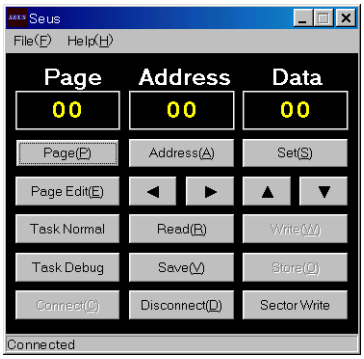


Fig. 6-2-1.

2. Operation

- **Page change**

  To change the page, click [Page] on the SEUS screen and enter the page to be changed. The page is displayed in hexadecimal notation.

- **Address change**

  To change the address, click [Address] on the SEUS screen and enter the address to be changed. Or click [▶] to increase the address, click [◀] to decrease the address. The address is displayed in hexadecimal notation.

- **Data change**

  To change the data, click [Set] on the SEUS screen and enter the data. Or click [▲] to increase the data, click [▼] to decrease the data. The data is displayed in hexadecimal notation.
  This operation does not write the data to the nonvolatile memory. If you want to write the changed data, click [Save] to write it.

- **Data saving**

  To write the all changed data to the nonvolatile memory, click [Save] on the SEUS screen. and wait for 2 sec.

  Note: Even if [Write] or [Store] on the SEUS screen is clicked, the data can not be write to the nonvolatile memory.

- **Data reading**

  The data displayed on the SEUS screen are the data values at the time when the pages and addresses were set, and they are not updated automatically. To check the data change, click [Read] on the SEUS screen and update the displayed data.

2-1-2. Precaution on Use of SEUS

Mishandling of the SEUS may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be saved before beginning adjustments.

1) Click [Page Edit] on the SEUS screen.
2) Click [Page], and enter the page number to be saved.
3) Click [Read] to read the data to be saved from the camera.
4) Click [File] and save the data to the PC.

2-2. SERVICE MODE

1. Setting the Test Mode

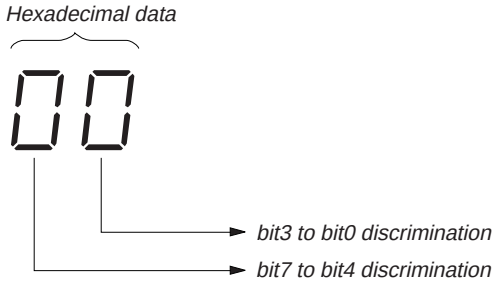
Page 2F	Address 23

Data	Function
80	Normal
11	Forced STILL mode power ON
12	Forced PLAY mode power ON
04	Forced MOVIE mode power ON

- Before setting the data, select page: 00, address: 01, and set data: 01.
- For page 2F, the data set is recorded in the non-volatile memory by saving data. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, release the data setting .
  1) Select page: 00, address: 01, and set data: 01.
  2) Select page: 2F, address: 23, and set data: 80.
  3) Save the data.
  4) Wait for 2 sec.
  5) Select page: 00, address: 01, and set data: 00.

2. Bit value discrimination

Bit values must be discriminated using the hexadecimal data for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Examples: If the hexadecimal data is “8E”, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Switch check (1)

Page 20	Address 80

Bit	Function	When bit value=1	When bit value=0
0	POWER switch (XPWER ON) (Control switch block (TOP))	OFF	ON

Using method:

1) Select page: 20, address: 80.
2) Read the data. By discriminating the bit value of the data, the state of the switch can be discriminated.

4. Switch check (2)

Page 20	Address 90 to 96

Using method:

1) Select page: 20, address: 90 to 96.
2) Read the data. By discriminating the data, the pressed key can be discriminated.

Address	Data						
	00 to 0B	0C to 26	27 to 47	48 to 72	73 to A4	A5 to DC	DD to FF
90 (KEY AD0) (IC401Ⓙ6)	Control button DOWN (Control switch block (MID)) S008	Control button UP (Control switch block (MID)) S006	DISPLAY WINDOW BACKLIGHT (Control switch block (TOP)) S003	WHITE BALANCE (Control switch block (TOP)) S004	EXPOSURE (Control switch block (TOP)) S005	COMPACT FLASH (Control switch block (UNDER)) S006	MEMORY STICK (Control switch block (UNDER)) S006
91 (KEY AD1) (IC401Ⓗ6)	Control button RIGHT (Control switch block (MID)) S003	Control button LEFT (Control switch block (MID)) S010	Control button CENTER (Control switch block (MID)) S007	AE LOCK (Control switch block (MID)) S012	MENU (Control switch block (MID)) S002		No key input
92 (KEY AD2) (IC401Ⓖ6)	QUICK REVIEW (Control switch block (UNDER)) S005	DIGITAL ZOOM (Control switch block (UNDER)) S004	SELF TIMER (Control switch block (UNDER)) S003	SCREEN STATUS (Control switch block (UNDER)) S002		FINDER (Control switch block (UNDER)) S001	LCD (Control switch block (UNDER)) S001
93 (KEY AD3) (IC401Ⓙ7)	OPEN (FLASH) (SW-410 board) (S001)	FLASH (SW-410 board) (S002)	METERING MODE (SW-410 board) (S005)	MACRO (SW-410 board) (S003)	BURST/BRACKET (SW-410 board) (S006)	FOCUS AUTO (SW-410 board) (S004)	FOCUS MANUAL (SW-410 board) (S004)
94 (KEY AD4) (IC401Ⓗ7)	NIGHT SHOT/ NIGHT FRAMING (SW-410 board) (S007)						No key input
95 (MODE DIAL 0) (IC401Ⓙ8)	Mode dial STILL (AE-S) (Control switch block (TOP))	Mode dial STILL (AE-A) (Control switch block (TOP))	Mode dial STILL (MANUAL) (Control switch block (TOP))	Mode dial STILL (SCN) (Control switch block (TOP))	Mode dial MOVIE (Control switch block (TOP))		No key input
96 (MODE DIAL 1) (IC401Ⓙ9)	Mode dial STILL (AUTO) (Control switch block (TOP))	Mode dial STILL (P AUTO) (Control switch block (TOP))	Mode dial PB (Control switch block (TOP))	Mode dial SET UP (Control switch block (TOP))			No key input

5. Switch check (3)

Page 60	Address B9

Function	When data = 11	When data = 01
FLASH OPEN DETECT switch (LS-067 board S001)	Close	Open

Using method:

1) Select page: 60, address: B9.
2) Read the data. By discriminating the data, the state of the switch can be discriminated.

6. Switch check (4)

Page 80	Address 13

Function	When data = 00	When data = 01	When data = 02
Shutter button (XAE LOCK SW) (Control switch block (TOP))	OFF	ON	ON
Shutter button (XSHTR ON SW) (Control switch block (TOP))	OFF	OFF	ON

Using method:

1) Select page: 80, address: 13.
2) Read the data. By discriminating the data, the state of the switches can be discriminated.

7. Switch check (5)

Page 80	Address 14

Function	When data = 00	When data = 01
CF COVER switch (Control switch block (CENTER))	Open	Close

Using method:

1) Select page: 80, address: 14.
2) Read the data. By discriminating the data, the state of the switch can be discriminated.

8. Switch check (6)

Page 80	Address 15

Using method:

1) Select page: 80, address: 15.
2) By discriminating the data, the rotation of the control dial can be discriminated.

Control dial (Control switch block (CENTER))	Data
When rotated in the left direction.	01
When rotated in the right direction.	02

9. LED, Segment LCD check

Page 20	Address 04
Page 80	Address 12
Page 8E	Address FE

Using method:

1) Select page: 00, address: 01, set data: 01.
2) Select page: 20, address: 04, set data: 02.
3) Select page: 8E, address: FE, set data: 20.
4) Select page: 80, address: 12, set data: 01.
6) Check that all LED (Power, Charge, Tally, Access, Segment LCD back light) are lit.
7) Select page: 20, address: 04, set data: 08.
8) Check that all segment of the segment LCD are lit.
9) Select page: 20, address: 04, set data: 00.
10) Select page: 80, address: 12, set data: 00.
11) Select page: 8E, address: FE, set data: 00.
12) Select page: 00, address: 01, set data: 00.

10. Record of Use check

Page 4F	Address 94 to 97

Address	Function	Remarks
94	Recording counter (Hexadecimal)	1000000-digit and 1000000-digit
95		1000000-digit and 10000-digit
96		1000-digit and 100-digit
97		10-digit and 1-digit

Using method:

1) The recording counter data is displayed at page: 4F, addresses: 94 to 97. These data are named D_{94}, D_{95}, D_{96} and D_{97} respectively.
2) Calculate the recording counter (N) using following equation. (Hexadecimal calculation)
   $N = D_{97} + D_{96} \times 100 + D_{95} \times 10000 + D_{94} \times 1000000$

11. Self Diagnostics Log check

Page 20	Address B0 to B8

Address	Initial value	Function
B0	00	“Repaired by” code (Occurred 1st time) *1
B1	00	“Block function” code (Occurred 1st time)
B2	00	“Detailed” code (Occurred 1st time)
B3	00	“Repaired by” code (Occurred 2nd time) *1
B4	00	“Block function” code (Occurred 2nd time)
B5	00	“Detailed” code (Occurred 2nd time)
B6	00	“Repaired by” code (Occurred 3rd time) *1
B7	00	“Block function” code (Occurred 3rd time)
B8	00	“Detailed” code (Occurred 3rd time)

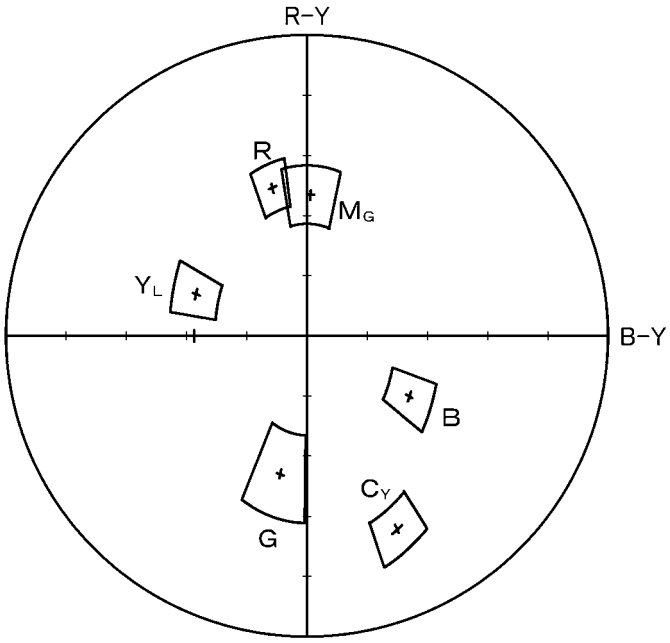
*1: “C” → “01”, “E” → “03”

Using method:

1) The self diagnostics log is displayed at page: 20, addresses: B0 to B5.
   Note: These data will be erased when the lithium battery (LR-018 board) is removed.

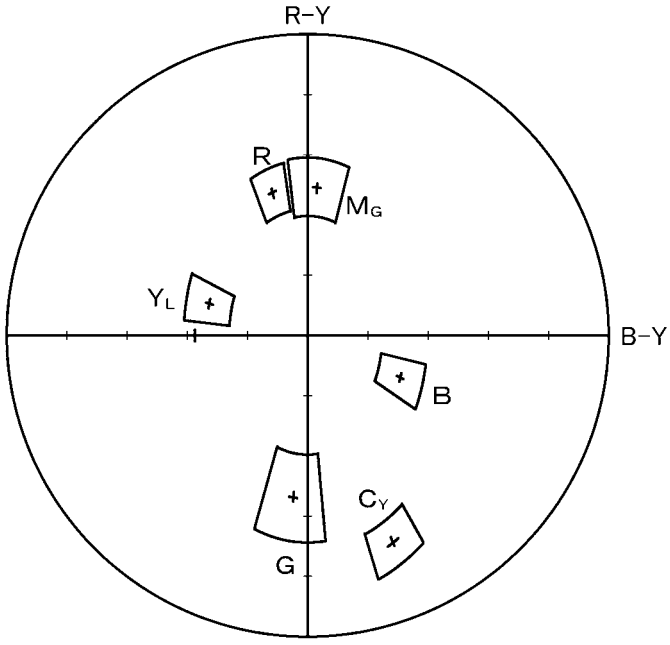
〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

For CAP-Normal mode

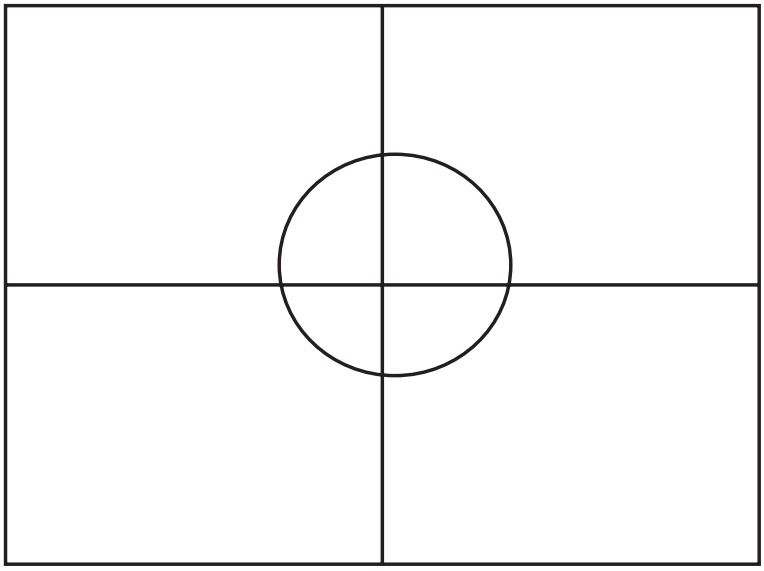


Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For CAP-Real mode

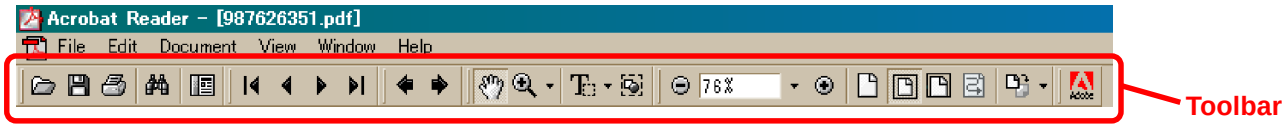


〈AF ILLUMINATION FRAME〉



Take a copy of AF ILLUMINATION FRAME with a clear sheet for use.

[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

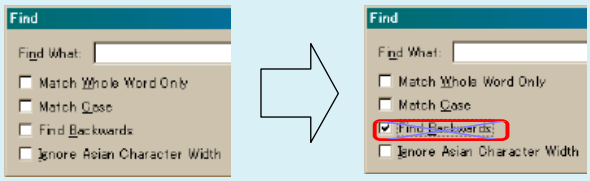
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

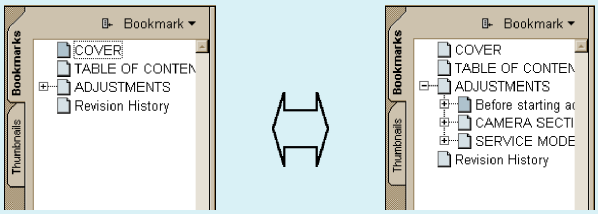
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

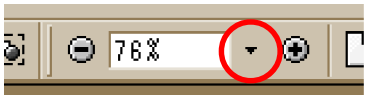
Moving with bookmark:
Click an item (text) on the bookmark pallet, and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2003.12	Official Release	—	—